Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers	))))))	WC Docket No. 03-173

REPLY COMMENTS OF AT&T CORP.

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January 30, 2004

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REPLY COMMENTS OF AT&T CORP.

AT&T Corp. ("AT&T") respectfully submits these reply comments to the comments filed in response to Notice of Proposed Rulemaking ("*Notice*") released by the Commission on September 15, 2003, and published in the Federal Register at 68 Fed. Reg. 59,757 (Oct. 17, 2003).

INTRODUCTION AND SUMMARY

To read the Bells' comments in this proceeding is to enter a time warp. It is as if the evidentiary record and Commission deliberations that culminated in the *Local Competition Order*, the six years of appeals from that Order, and the Supreme Court decision rejecting the Bells' attacks on the efficient replacement cost methodology embodied in the Commission's "TELRIC" rules, had never occurred. Once again, we are back in early 1996, and the thoroughly "discredited" reproduction cost standard, *Notice* ¶ 69 n.112, is still a fit subject for discussion.

A brief history lesson is in order. In the *Local Competition* proceedings, the Bells advocated that unbundled network element ("UNE") rates be based on their "existing network design and technology that are currently in operation." *Local Competition Order* ¶ 684 & n.1689. The Commission rejected that position, finding that it was "an embedded cost methodology" that would allow the Bells to recover "inefficient" costs and the costs of "obsolete network design." *Id.* Such a standard, the Commission held, would be "pro-competitor – in this

case the incumbent LEC – rather than pro-competitive" and would deter "efficient investment decisions and competitive entry contemplated by the 1996 Act." *Id.* ¶ 705.

The Bells appealed. As here, they contended that their "actual prudent investment" and "historical costs" are a "better gauge of real forward-looking costs" because the Bells have been operating under "price caps." Reply Brief of Petitioners, *Verizon Commun., Inc. v. FCC*, No. 00-511, at 20 (S. Ct., July 23, 2001).

The Supreme Court disagreed. The Court noted that "[i]f leased elements were priced according to embedded costs, the incumbents could pass these inefficiencies to competitors in need of their wholesale elements, and to that extent defeat the competitive purpose of forcing efficient choices on all carriers whether incumbents or entrants. The upshot would be higher retail prices consumers would have to pay." *Verizon Commun., Inc. v. FCC*, 535 U.S. 467, 511-12 (2002) ("*Verizon*"). The Supreme Court recognized that permitting the Bells to recover their "actual" costs, even after years of price cap regulation, would allow them to escape penalties for inefficient investment decisions and shift the costs of any inefficiencies to their competitors. *Id.*

The Bells, knowing perfectly well that the reproduction cost standard has been "discredited," *Notice* ¶ 69 n. 112, couch it in euphemisms. They refer to it as "actual, forward-looking costs," Weisman (Qwest) Decl. ¶ 49; "the true forward-looking costs that the ILEC is actually likely to incur," Aron-Rogerson (SBC) Decl. at 43; and "the long run costs that the incumbent actually expects to incur going forward," Shelanski (Verizon) Decl. ¶ 2. But the semantics cannot conceal the economic reality. The Bells' cost standard would, with near perfect fidelity, base UNE prices strictly on the costs of reproducing the Bells' existing networks, using their embedded architecture and embedded technology mix. By any name, these are reproduction costs.

The Commission was absolutely correct in rejecting the reproduction cost standard in 1996, and in finding it discredited in its present Notice. The forward-looking cost of the actual incumbent local exchange carrier ("ILEC") network is not the cost of reproducing or cloning that actual network, but the cost of reproducing its *capabilities*, using the most efficient technology available today. In a competitive or contestable market, no one would pay a premium to purchase an old inefficient network over a new and efficient network of equivalent capability. Moreover, a reproduction cost methodology, because it would require an item by item analysis of the incumbent's "actual" network, would require an exponential increase in the amount of discovery necessary from the ILEC—even if the necessary data existed (and they often do not). *See Verizon*, 535 U.S. at 522 (noting the "relative ease of calculation" of the TELRIC standard in comparison with the incumbents' alternative standards, which "preserve home-field advantages for the incumbents").

The Bells do not even attempt a theoretical defense of reproduction costs. Instead, they assert that the issue is moot because price cap regulation has made existing networks so efficient that their reproduction costs and forward-looking economic costs are now one and the same. But this claim is as unfounded today as it was two years ago, when the Supreme Court, at the Commission's behest, flatly rejected it. First, an efficiently configured network for the supply of UNEs is likely to differ considerably from a network optimized to supply the entire gamut of regulated and unregulated services that the Bells now offer. *Id.* at 525-26. Second, the efficient short run mix of new and old technology for a firm with large amounts of sunk investment—the species of efficiency that price caps seek to optimize—is likely to differ significantly from the mix of assets that is optimal when all assets are valued at their current cost. Third, price cap regulation, as actually implemented, is riddled with loopholes and escape hatches that preserve a substantial link between a firm's "actual" costs and rates. Adoption of a reproduction cost

standard would merely reinforce this linkage, and thus would have a pernicious effect on incumbent incentives. *Verizon*, 535 U.S. at 512. For all of these reasons, adopting reproduction cost ratemaking—by whatever name—would be arbitrary and capricious.

The Bells' attacks on TELRIC are also drawn from the trash bin of *Verizon*. The Bells told the Supreme Court that "TELRIC will result in constantly changing rates based on ever cheaper, more efficient technology [and that] the incumbents will be unable to write off each new piece of technology rapidly enough to anticipate an even newer gadget portending a new and lower rate." *Id*. at 518. The Supreme Court rejected that argument. First, the TELRIC standard does not require optimal efficiency. The assumption that new entrants will replicate existing wire center locations, and the time lag between rate changes, give incumbents ample margin for error. *Id*. at 505-506. Moreover, even rigorous application of the efficiency standard would do no more than replicate the performance of competitive and contestable markets, where competitive pressures ruthlessly revalue existing assets whenever newer technology arrives on the market. *Id*. at 509-12. In this regard, the Supreme Court found that Verizon simply misapprehended the role of return on capital and depreciation under TELRIC, because TELRIC expressly authorized state commissions to set forward-looking, risk adjusted depreciation lives and returns to account for technological advances and the risk of obsolescence. *Id*. at 519. As long as regulatory depreciation formulas allow recovery of economic depreciation—and the Commission's existing standards expressly do so—the incumbent carriers will have a full and fair opportunity to recover their costs. Even the Bells' economists concede this. And the Bell-sponsored "empirical" studies purportedly supporting the opposite conclusion rely on ARMIS embedded cost data, which the Bells themselves have dismissed as economically irrelevant for the purposes for which it is being used.

The supposed inconsistencies between the competitive assumptions of TELRIC and the relevant assumptions about risk, scope and scale economies, and entry costs, rest on a fundamental misunderstanding of TELRIC. TELRIC models the performance of contestable markets, not markets that necessarily contain multiple facilities-based competitors. In a contestable market, a single firm can supply the entire market, and the risks of facilities bypass are, as in actual local markets, relatively low.

The Bells' claim that appropriate geographic realism warrants adoption of a reproduction cost standard is equally wide of the mark. The issue of modeling detail goes to the choice of cost model, not the merits of TELRIC itself. Like other cost models, TELRIC models have become increasingly sophisticated in accounting for customer locations, customer services, geography and topography. There is no reason to believe that reproduction costs could be adduced with comparable precision—actual experiences in state commission proceedings (and the Commission's own audits) have proven time and again that the Bells' records are simply not detailed or accurate enough. And the Bells have not submitted here any operational "model" for computing their reproduction costs that would allay this concern—or even described such a model other than in the broadest generalities. In any event, greater precision in modeling reproduction costs is a pointless exercise, for reproduction costs are economically irrelevant.

The notion that TELRIC is impractical to administer or verify is another claim discredited by the Supreme Court. *Verizon*, 535 U.S. at 522. State-to-state variations in UNE prices are inevitable in a hybrid federal-state regulatory scheme, regardless of which cost standard the Commission adopts. The variability of UNE prices has been narrowing over time, however, as state commissions have become more experienced at applying TELRIC. The "econometric" studies offered by the Bells can claim the contrary only through a crude statistical sleight of hand. When appropriate and recognized measures of statistical linkage are used, these

very studies confirm that state UNE prices correlate strongly with variations in proxies for forward-looking costs. Likewise, the downward trend in UNE prices since 1996 reflects both the greater experience of state commissions in applying TELRIC, and the declining cost nature of the local telephone business over the same period.

In every particular, the Bells' assumption and input proposals confirm the economic bankruptcy and impracticality of their reproduction cost focus:

Network Assumptions. The debate over network assumptions offers further evidence of the unworkability of reproduction cost ratemaking. Although the Bells urge adoption of a "real-world" approach, this effectively concede that their data on "actual" routings, topographies and other geographic values are both inaccurate and incomplete. The Bells offer no evidence that the right-angle routing algorithm used in many CLEC cost models—or any other simplifying algorithm—causes an understatement of costs. To the contrary, empirical comparisons in Florida and elsewhere have shown that these simplifying assumptions produce conservatively high results.

The Bells do not dispute that accurate determination of loop costs requires data on line counts for all high-capacity loops, whether available as UNEs or not. The Commission should expressly require the Bells to produce such data in discovery.

Technology Assumptions. The Bells argue, as in the past, that a forward-looking cost model should ignore the most efficient commercially-available digital loop carrier technology for fiber-fed loops: Integrated Digital Loop Carrier using GR-303 technology. The record confirms, however, that GR-303 is both technologically feasible and cost-effective. Thus, as the Bells' own testimony confirms, the real reason for their failure to deploy this technology is their sunk investment in obsolete and inferior technology.

Fill Factors. The Bells' comments confirm the lack of any credible case for basing loop prices on embedded fill factors. Accommodating churn requires only modest amounts of spare capacity: most churn is essentially self-canceling; and dwindling demand for second lines has reduced the amount of churn. A forward-looking network would have little defective equipment. In any event, "breakage" that results from the limited number of discrete cable sizes offered by manufacturers may well be adequate to provide for the need for spare from churn and defective plant—and the buffer spare that may additionally be required is modest and amply provided for by the cable sizing factors incorporated in modern TELRIC models. And the cost of capacity to meet future growth in demand, whether efficiently sized or not, is not attributable to current ratepayers and should not be recovered from them. Verizon's assertion that current ratepayers should pay for "growth capacity" because "on average" utilization in the network "remains stable over the long run" is the same causation shell game that the Wireline Competition Bureau rejected in the *Virginia Arbitration Order*. Verizon confuses average utilization *in the aggregate* with the utilization of *individual* loops, the relevant focus of analysis.

The notion that the existence of competition warrants a presumption that existing fill factors are efficient is absurd. The record (and the Commission's findings in the *Triennial Review Order*) make clear that the Bells do not, and cannot as a matter of law, face effective competition for any of the network elements subject to the TELRIC pricing rule. Moreover, if competition actually increased, efficiency would require that the Bells decrease their costs per line by *increasing* their current fills, not keeping them stable and with excess capacity. And even if (contrary to fact) existing fills were efficient, the costs of the share of spare capacity acquired to meet anticipated future growth cannot properly be recovered from current ratepayers.

The Bells' claim that increasing fill factors would degrade service quality is equally unfounded. The Bells offer no empirical support for this self-serving claim, and it is

contradicted by the incumbents' own engineering guidelines. Equally unsupported is the Bells' claim that their carrier-of-last-resort obligations warrant recovery of excessive capacity costs from CLECs. The incumbents offer no evidence that state commissions somehow require them to maintain bloated levels of spare capacity. Even if the Bells were correct, however, the costs of maintaining such capacity should be recovered through universal service funds, not UNE pricing. Finally, the use of embedded fill factors would make UNE cost determination less transparent and open, not more so.

Structure Sharing. The Bells' position on structure sharing exemplifies their schizophrenic treatment of sunk investment. The Bells' main argument against high structure sharing percentages is that increased structure sharing makes no economic sense once other carriers have built their own networks. This argument is correct, however, only in the short run, when investment in support structure is sunk. In the long run—the time horizon of TELRIC—there are, and will be, plenty of opportunities for sharing buried and underground structure. If the short run is the relevant time perspective, the *unshared* portion of the Bells' investment in outside plant, which is largely sunk, is essentially zero. The Bells cannot have it both ways, endorsing a methodology that allows them to use short-run costing assumptions where they produce higher costs, and simultaneously advocating long-run cost assumptions where *they* produce higher costs. Finally, Verizon's claim that coordination costs outweigh the savings from structure sharing is unsupported. The Georgetown installation project cited by Verizon, despite its extraordinary complexity, confirms that effective coordination can be achieved at a reasonable cost.

Structure Mix. Outside plant mix—the relative proportions of aerial, buried and underground cable—further illustrate the incoherence of the Bells' arguments for embedded input assumptions. The Bells are correct that past investment decisions limit the carriers' ability

in the short run to optimize their structure mix in light of recent advances in technology. In the short run, however, most structure investment is sunk, and thus has an economic cost of zero. If the Bells want this investment valued at its long run replacement cost, consistency requires that the valuation also reflect the efficiencies available in the long run from optimizing the structure mix.

Placement Costs. The Bells' arguments for using embedded placement costs are equally unsupported. The Bells do not—and cannot—dispute that advances in technology would dictate a considerably different, and less expensive, configuration of serving areas, feeder-distribution interfaces ("FDIs"), serving area interfaces ("SAIs"), and remote terminals than is now embedded in existing local networks. The Bells' only rejoinder—that forward looking models of placement costs engage in "gamesmanship" by ignoring real world cost constraints—is refuted by the record. TELRIC cost models properly account for all of the significant effects of terrain, urbanization, and other relevant factors. And Qwest's assertion that the Arizona commission endorsed a "time machine approach," which assumed that "most of the roads in downtown Phoenix and Tucson are made of dirt," is a palpable falsehood. The Arizona commission assumed the very opposite.

Switching Costs. The Bells offer no credible argument for imputing shallow ("growth") discounts to switching capacity that an efficient carrier would buy at deeper ("new") discounts—and which the Bells in fact bought largely at such discounts. The Bells' claim that vendors would not offer deep discounts for new equipment if the Bells used those discounts for most of their purchases ignores the fact that the Bells have done just that since the 1980s.

The Commission should reject Verizon's arguments for recovering switching costs through traffic-sensitive switching charges. Verizon does not dispute that (1) switch purchasers pay vendors per line, not per minute of use; (2) modern switches have substantial spare capacity,

and do not exhaust on usage; (3) less than 15 percent of costs relating to peak periods are traffic sensitive; (4) there is no practical way to recover those costs through a peak load rate structure; and (5) a per-port flat fee, unlike a per minute charge, is competitively neutral.

Cost of Capital. The cost of capital adjustments proposed by the Bells violate TELRIC principles, and would boost the cost of capital to competition-deterring levels. Neither S&P 500 firms, nor CLECs and other long distance carriers form appropriate risk proxy groups. The first proxy group would overstate the cost of capital by foregoing the financial economies of scale and scope that the Bells and other local exchange carriers achieve through integration into multiple product markets and providing UNEs over the same networks that they use to provide their own retail services. Diversified industrial companies are not remotely representative of the markets, risks, or capital requirements of the local telephone business. CLECs are new entrants in markets dominated by the legacy monopoly incumbent carriers, with only tiny footholds in local markets, and thus have much higher business risks than the incumbents. And long distance carriers have been subject to intense competition for years and now face entry from the Bell monopolists that can self-supply their own access at economic cost while charging the long distance carriers above-cost access rates. And the Bells gain nothing by claiming that UNE-only companies would lack the diversification needed to achieve a cost of capital as low as the Bell holding companies' cost of capital. If integration of the UNE business with the Bells' other lines of business achieved genuine economies of scope and scale, than an efficient UNE provider would integrate with a firm providing those other services, just as the Bells have done.

Verizon and BellSouth's arguments in favor of the one-stage (perpetual growth) discounted cash flow ("DCF") methodology are economic nonsense. It is mathematically impossible for above-average growth rates to persist indefinitely, and the Bells offer no evidence that rational investors assume to the contrary. Verizon's assertion that the present value of the

cost overstatement generated by the one-stage assumption is insignificant is false, and Verizon's witness has conceded as much in recent state UNE rate proceedings. The anomalous results attributed by Verizon to multi-stage DCF models are the product of the contrived assumptions of Verizon's studies. Finally, the higher cost of equity estimates generated by the three-stage DCF model for AT&T and MCI than for Verizon are precisely what one should expect: AT&T and MCI's overall business risk os much higher than Verizon's.

Verizon's arguments against the capital asset pricing model ("CAPM") are essentially a rehash of the arguments that Verizon made without success in the Virginia Arbitration proceeding. The CAPM is a widely used model of the cost of equity, and Verizon's criticisms are unfounded. Verizon's alternative posture—that the Commission should mandate very high national values for the CAPM—is equally unsound. National input values would have to be updated continually. Moreover, the specific values proposed by Verizon are grossly excessive. Long-term debt is not a risk-free form of investment. There is no reason to believe that the Bells have *betas* above 1.0 (*i.e.*, are riskier than the market as a whole). And reliable financial forecasts now indicate that the forward-looking market risk premium is in the range of three to four percent—far below the levels indicated by Dr. Vander Weide's historical data, much of it decades old.

The cost of debt should reflect debt issues with terms appropriate for capital assets being financed. Reliance strictly on extremely long-term debt rates, as Verizon proposes, is improper. No rational lender would make loans with maturities that average significantly longer than the lives of the assets being financed.

The relevant capital structure (debt/equity ratio) is the target capital structure—*i.e.*, the debt-equity ratio that an efficient financial manager would seek to achieve over the long run. The Commission should decline to mandate use of a particular one time "current" market ratio as

proposed by Verizon. The current market ratio is a short-term "snapshot" that reflects short-term market oscillations, which can result in far more or less leverage than an efficient investor or financial manager would seek for the company over the long run.

The various additives proposed by the Bells for competitive risk, regulatory risk, lease cancellation risk, and "options" or "sunk cost" risk are equally illegitimate. To the extent that these risks actually exist, they are known and anticipated by investors, and thus compensated for by the returns that investors already demand.

Depreciation. Verizon's arguments for jettisoning Commission-approved asset lives in favor of GAAP (financial) lives are merely a repackaging of claims that Verizon and the other Bells have repeatedly offered without success in both Commission and state proceedings. Verizon has provided no ground for a different outcome here. The TFI "analyses" offered by Verizon as evidence that competition and innovation are shortening asset lives are results-driven guesswork. TFI's forecasts over the past decade of an imminent "avalanche" of asset replacements have been consistently wrong, and the Bells have offered no reason to believe that the latest iteration of these predictions is any more likely to come true. Verizon's claims notwithstanding, GAAP lives still have a conservative bias, designed to protect investors, that is inappropriate in regulation for the protection of ratepayers. Verizon's protest that the Bells have no incentive to understate depreciation lives is obviously untrue: shortening depreciation lives may reduce a carrier's reported income in the short run, but has no effect on the carriers' actual cash flow. Moreover, shorter depreciation lives, by justifying higher annual depreciation charges and thereby higher UNE prices, create an effective deterrent to competitive entry. Finally, even the Bells do not believe their own claims about the appropriateness of GAAP: in recent years, they have supplemented their quarterly earnings reports with so-called "non-GAAP

reconciliations"—in plain English, admissions that the diminution of asset values implied by the companies' financial asset lives is unrealistically rapid.

Expense Factors. The Bells' comments confirm that the incumbents' embedded expenses cannot serve as valid measures of forward-looking expenses, but must be reduced by a cost factor. The Bells claim that changes in their expenses do not correlate with changes in their investment levels is empirically false; and the claim that future declines in expenses are unlikely is refuted by recent trends in the telephone industry, and by the performance of every regulated network industry that has made the transition from monopoly. Qwest's "proof" that CLEC cost studies and state commissions have allowed recovery of only a "small fraction" of embedded expenses would be meaningless even if Qwest's embedded expense data had any economic significance: Qwest has compared the forward-looking expenses of supplying particular UNEs with the embedded costs of Qwest's retail and wholesale operations *combined*. Finally, the Commission should decline the invitations of Qwest and SBC to prescribe specific methodologies for calculating GSA expenses, product management and sales, and the shared cost allocator. Qwest and SBC are seeking here to relitigate methodologies that have largely failed to win acceptance among state commissions. The proposed methodologies are illegitimate, and the state commissions properly rejected them.

Rate Deaveraging. Failure to deaverage rates by population density discourages efficient facility investment, encourages inefficient arbitrage, and deprives many consumers of any opportunity for competitive choice. To defer rate deaveraging until states have finished rebalancing the incumbent's *retail* rate rates, as BellSouth proposes, would hold the competitive goals of the Telecommunications Act of 1996 ("Act" or "1996 Act") hostage to state policies of maintaining uneconomic implicit rate subsidies.

Non-Recurring Charges. The Bells' proposals for non-recurring charges ("NRCs") violate the most basic principles of forward-looking economic cost-based pricing. The Bells' arguments for basing rates on the incumbents' "actual" costs are as unfounded for NRCs as for recurring rates. The Bells have every incentive to be *inefficient* in performing non-recurring activities for CLECs, and the record makes clear that the Bells have lived down to those incentives.

The Bells' proposal to allow recovering the cost of *any* one-time activity "up front" from the CLEC that first ordered the activity is another attempt to foreclose competition. The benefits from a reusable asset are enjoyed by all future users of the asset, and therefore should be recovered through recurring changes. Allowing the Bells to recover these costs through NRCs from the first user would create double recovery and barriers to entry. In this regard, the bogeyman of nonrecovery is completely unsupported. The Bells have offered no evidence that they have actually experienced such problems since 1996, even for non-recurring costs that state commissions have required the Bells to collect through recurring charges.

The Bells' attempt to collect disconnect charges at the time of initial connection is equally unjustified. Deferring the collection of disconnect charges until disconnection actually occurs does not shift "risk"; unless the facilities are actually disconnected (and they usually are not), there is in reality no "risk" to shift. The vast majority of UNE orders, including the orders (if any) that trigger an actual act of facilities disconnection, are placed by repeat players that pose no serious uncollectibles risk, and the Bells already recover any residual uncollectibles risk directly through an allowance included in UNE cost models and UNE prices.

ILECs should not be permitted to recover any costs associated with loop conditioning from CLECs, because such recovery is flatly inconsistent with forward-looking cost principles. If the incumbents had eliminated their load coils, excessive bridge taps and repeaters—as the

Bells' own industry guidelines have dictated for decades and current recurring TELRIC rates pay for—no loop conditioning would be necessary.

Rules for Discovery. The Bells' comments confirm the urgent need for the Commission to take action to mitigate the information asymmetry suffered by CLECs in UNE pricing litigation, and to reduce the ability of ILECs to stonewall against CLEC discovery requests. The Bells' proposals to limit the extent of discovery, and to allow it to begin only *after* cost studies have been filed, make clear what CLECs and state commissions are up against. And requiring CLECs to file cost data about their operations would be little more than a license for harassment. The divergent product mix, scale, market share and competitive position should make obvious that competitors' cost data have little or no relevance to the forward-looking costs of an efficient UNE provider. If there are exceptions, state commissions are fully capable of identifying them in particular cases.

Automatic Rate Indexing. The Commission should not require automatic adjustments to UNE rates over time in lieu of UNE pricing cases at appropriate intervals. Experience teaches that the productivity offsets built into automatic adjustment mechanisms almost always understate actual productivity gains. Moreover, determining appropriate adjustments would be enormously complex and burdensome. Significantly, even SBC opposes an indexing mechanism.

True-Up Mechanism. The Commission should decline to adopt a true-up mechanism for rate changes that may result from any order it issues here. As Verizon admits, a mandated true-up mechanism would create lingering uncertainty, possibly for many years, about the actual costs of competitive entry. For potential entrants, this lingering uncertainty would be a major barrier to entry and a major deterrent to investment.

I. THE ALTERNATIVE COST STANDARDS PROPOSED BY THE BELLS ARE ALL VARIATIONS OF REPRODUCTION COSTS.

Adopting the Bells' "discredited" standard of reproduction costs would lead to almost certain reversal by the courts. Allowing the Bells to recover "costs based on their existing operations . . . that reflect inefficient or obsolete network design and technology" is just as competition foreclosing today as it was in 1996, when the Commission issued its *Local Competition Order*, and in 2002, when the Supreme Court affirmed that order and rejected the Bells' arguments that their existing costs were efficient because of "price cap" regulation.

The Bells advance no serious arguments to the contrary. First, they claim that incumbent networks must be presumed—even conclusively—to be efficient because of "price cap" regulation. But the advent of price cap regulation occurred long before the *Local Competition Order* and the Supreme Court's *Verizon* decision. The Bells have offered no reason to believe that price cap regulation has become dramatically more effective since 1996, let alone 2002. Certainly, there can be no tenable claim that the incumbent networks have suddenly achieved a level of efficiency that they claimed to be unattainable only a few years ago. And, as the Supreme Court recognized, whatever the salutary effects of price cap regulation, allowing the Bells to recover their "actual" costs in UNE rates would reverse the benefits of price cap regulation because the Bells would now be able to recover inefficient, embedded costs from their competitors. Again, nothing has changed in the past two years that calls that holding into question.

Ultimately, the Bells' reproduction cost position is demolished by their own economists. These experts admit that the Bells upgrade only a small fraction of their networks in any year, and have *not* been able to achieve the level of efficiency characterized by firms operating in effectively competitive or contestable markets. Moreover, the Bells' experts concede that, once an incumbent has deployed a long-lived asset, the sunk character of the investment in the asset

will cause the incumbent to make investment decisions going forward that, while perhaps efficient on the basis of short run considerations, do not result in a network that is today optimized to serve current demand. Shelanski (Verizon) Decl. ¶ 30; Aron-Rogerson (SBC) Decl. at 19. This fact explains why, price caps notwithstanding, all existing incumbent networks still contain outdated digital loop carrier loop technologies and analog switches—facilities that no carrier would ever deploy anew today—as well as enormous spare capacity even where demand is declining.

Alternatively, the Bells contend that their standard has the virtue of "accurately" calculating costs. Even if this were true—and, as explained below, it is not—there is no benefit to the Commission in accurately calculating the reproduction costs of an existing network. Accurately calculating the reproduction costs of the Bell networks would merely determine the level of inefficiency that persists in their existing network designs and operations. And for this reason, any order jettisoning TELRIC on this ground could not be sustained on appeal.

A. The Alternative Standards Proposed By The RBOCs Boil Down To Reproduction Cost.

Although ratemaking is often a complex undertaking, the choice between the competing cost standards at issue here is not a close call. On the one hand, the Commission has in place a cost standard that the Supreme Court has endorsed as reasonable. There is no other hand. The alternative proposed by the Bells is the same standard of reproduction costs that the Commission repudiated in the *Local Competition Order*; that the Supreme Court found to be contrary to the pro-competitive purpose of the Act; and that even the Bells' own economists have derided as economic nonsense.

The Bells struggle to portray their proposals as a mere fine-tuning of the TELRIC replacement cost standard. *See, e.g.*, BellSouth at 2. But the details of the proposals make clear that the Bells seek not to refine TELRIC, but to destroy it. Verizon's economic testimony

reveals this most starkly. "The ILEC's actual forward-looking costs can best be measured by basing UNE prices on the ILEC's existing network, including the configuration of that network, its operational characteristics, and mix of technologies the ILEC will use to supply UNEs." Shelanski (Verizon) Decl. ¶ 16. The "existing network" is then "revalu[ed]" by determining the "actual costs that would be incurred to put in place the ILEC's existing network today." *Id.* ¶ 21; *see also* Kahn-Tardiff (Verizon) Decl. ¶ 33 (rates should be based on "the replacement cost of the current network, accounting for the amounts of equipment and the mix of vintages that it contains"); Verizon at 29-30 (arguing that regulatory precedent supports use of "incumbents' actual networks" as measure of "forward-looking costs").

The other Bells, while paying lip service to forward-looking pricing principles, would also permanently anchor network element rates to the costs of reproducing their existing networks. For example, while BellSouth claims to "support[] the retention of a forward-looking cost method" that "retain[s] a long-run orientation," BellSouth at 2-3, its experts testify that UNE rates should be based on the "cost of a replacement network that assumes existing network routes and plant and equipment locations," NERA (BellSouth) Decl. ¶ 50. If the existing network is populated with obsolete technology, the Commission must assume that this is a "judicious" and efficient result. *Id*. ¶¶ 51-52 & n.42.

Qwest likewise proposes to base UNE rates on "the actual network characteristics of the incumbent provider." Qwest at 15-18; *see also* Weisman (Qwest) Decl. ¶ 20. The results of this approach would be presumed reasonable; and this presumption could be rebutted only by showing that a more efficient technology or design has been "deployed on a scope and scale comparable to that of the ILEC." Qwest at 15-21, 36-37; *see also* Weisman (Qwest) ¶¶ 37-43. Because the only local carriers operating on a "scope and scale comparable to that of" one Bell are the other incumbent Bells, the opportunity to rebut the efficiency presumption is illusory.

SBC also would lower the efficiency bar to the ground. SBC asks the Commission to "abandon the premise that each aspect of [the] carrier's network will reflect the cutting-edge efficiency of a perfectly competitive market or anything resembling it." SBC at 25. Instead, in SBC's view, "efficiency" means only "the more realistic efficiency of the ubiquitous networks built up over time and operated by the ILECs whose 'costs' are at issue." *Id*. Hence, an incumbent's "actual network" is "the only reasonable means for measuring actual forward-looking costs." *Id.* at 26; *see also* Aron-Rogerson (SBC) Decl. at 43 (rates should be based on "the ILEC's actual network and the actual level of efficiencies . . . that it has achieved").

Given the failure of the Bells to provide the Commission with a clear and complete model for implementing their reproduction cost concept, the character of the Bell cost standard is revealed most vividly by the Bells' proposed inputs:

- The "route configuration and average loop length" found in the incumbents' "existing network" should be taken as given, without considering whether "carriers building facilities today could deploy a network with a more efficient configuration." Shelanski (Verizon) Decl. ¶ 50; *accord*, BellSouth at 14, 22-23; NERA (BellSouth) Decl. ¶¶ 70-71; Qwest at 30-32; SBC at 56-58; Aron-Rogerson (SBC) 18-19; Verizon at 40; Shelanski (Verizon) Decl. ¶ 50.

- Technology assumptions should replicate the technology mix in the existing network. BellSouth at 24; Qwest at 37; SBC at 58-59; Verizon at 41-42. Thus, the "existing" mix of "loop technologies" should be deployed even if "an entrant could provide service more efficiently" using a different configuration. Shelanski (Verizon) Decl. ¶ 48.

- The "structure mix" found in the incumbents' "existing network" should also be taken as given without considering whether "carriers building facilities today could deploy a network with a more efficient configuration." Shelanski (Verizon) Decl. ¶ 50; *accord*, Qwest at 34-36; SBC at 61-63.

- "Actual fill inputs in ILEC cost studies" should be deemed "dispositive" regardless of whether they represented efficient levels of spare capacity. NERA (BellSouth) Decl. ¶ 78; *accord*, BellSouth Exh. 1 (principle 14); SBC at 4-5, 64-65; Shelanski (Verizon) Decl. ¶ 51-53.

- The best measure of the amount of structure sharing achievable in an efficient network is the "actual" amount of sharing in the embedded network. BellSouth Exh. 1 (principle 14); Verizon at 46-47.

- The expenses recovered from UNE prices should equal the incumbent carriers' current level of expenses. Qwest at 53; SBC at 76; Verizon at 57-59.

- Nonrecurring charges too must reflect existing practices without regard to current best practices. The Commission should allow recovery of the incumbent carriers' "actual" or "out-of-pocket" NRCs, and should presume that current practices are efficient. BellSouth at 47; NERA (BellSouth Decl.) ¶¶ 100-02; Qwest at 55; SBC at 79-83; Verizon at 77-81; Shelanski (Verizon) Decl. ¶¶ 55-61.

Even if the Commission could erase the past eight years and begin anew, the reproduction cost standard advocated by the Bells would have to be rejected as economically unsound. The use of "reproduction cost . . . destroy[s] the value of a replacement cost approach. It would, for example, allow inclusion of an expensive plant in the rate base despite technological change that destroyed the value of the existing plant. The more obsolete the plant, the higher might be the rates." Stephen Breyer, REGULATION AND ITS REFORM 39 (1982); *see also Missouri ex rel. S.W. Bell Tel. Co. v. Public Serv. Comm'n*, 262 U.S. 276, 312 (1923) (Brandeis, J. dissenting) ("If the aim were to ascertain the value (in its ordinary sense) of the utility property, the enquiry would be, not what it would cost to reproduce identical property, but what it would cost to establish a plant which could render the service, or in other words, at what cost could an equally efficient substitute be then produced."). By definition, the reproduction cost standard simply ignores all innovations and advances in efficiency that have occurred since the assets were installed. Willig Reply Decl. ¶¶ 17-18. As such, the reproduction cost standard does not even attempt to replicate the prices that would prevail in effectively competitive or contestable markets, *id.*, which the Bells themselves concede should be the touchstone for UNE rates, *see* Weisman (Qwest) Decl. ¶ 40; NERA (BellSouth) Decl. ¶ 73.

Remarkably, the very Bell economists that now purport to endorse the use of reproduction costs have derided it in the past as inherently flawed. "The 'reproduction cost' to

which prices in purely competitive markets tend to correspond is not the current cost of reproducing the existing plant, brick by brick, but the current cost of producing the service *with the most modern technology available*." Alfred Kahn, I THE ECONOMICS OF REGULATION, 112 (1970) (emphasis added). If "particular assets are really to be replaced in kind, there must be something wrong with allowing *any* obsolescence in the annual depreciation charge." *Id*. at 113 n.71 (emphasis in original). Presumably for these reasons, Dr. Kahn has described the "reproduction" cost standard as "constipat[ing]" the regulatory process. Alfred Kahn, *Competition and Stranded Cost Re-Revisited*, NATURAL RESOURCES JOURNAL 29, 34 (Winter 1997).

Instead, throughout the 1980s and early 1990s, Dr. Kahn and other NERA economists were avid proponents of the "stand-alone cost" test as a constraint on the freight transportation rates charged by market-dominant railroads and energy pipelines. *See* Alfred Kahn, THE PASSING OF THE PUBLIC UTILITY CONCEPT: A REPRISE 18-19 (1983) (arguing that railroad rates for market-dominant traffic should be limited to the stand-alone cost of "carrying coal by the most efficient means available," including slurry pipelines); *Williams Pipe Line Co.*, FERC Docket No. IS90-21-000, 39 Tr. 6352-54, 6455-57, 6374, 6380, 6458, 6504-05, 6511 (July 9, 1991) (testimony of Dr. Kahn) (recommending that rates for both individual services and overall company earnings be constrained by the stand-alone cost test). As endorsed by Dr. Kahn, the stand-alone cost test embodied a vision of "blank slate" hypothetical efficiency far more radical and uncompromising than the scorched node efficiency standard ultimately codified in the TELRIC rules. Stand-alone costs, he emphasized, are "the minimum costs that an efficient new . . . supplier would incur to provide some or all of [the incumbent's] existing services in the absence of barriers to entry." *Williams*, 39 Tr. 6353 (testimony of Dr. Kahn). For this reason,

Dr. Kahn has explained, the constraints imposed by the past investment decisions of the incumbent firm are economically irrelevant:

> Q. Assume two hypothetical pipelines, sir, that provide identical services. One pipeline is a lean, efficient system. The other pipeline has let its costs get badly out of control and maybe has made some silly, high-priced purchases in the past. For identical combinations of services, the stand-alone costs of those services should be identical from one company to the other; is that correct?
>
> A. That's correct.
>
> Q. That's because stand-alone costs are the costs that an efficient hypothetical new entrant would incur to provide a group of services?
>
> A. Exactly.
>
> Q. So the efficiency or inefficiency of an existing pipeline by definition does not affect the stand-alone costs of the services it provides?
>
> A. That's correct. *That's exactly the point of the stand alone cost ceiling.*"

Williams, 39 Tr. 6374 (testimony of Dr. Kahn) (emphasis added).

Given this basic economics, it is unsurprising that even the Bells seem embarrassed by the implications of their proposed standard. They concede that, where use of reproduction costs could not even pass the red-face test (*e.g.*, where the incumbent networks continue to employ analog switches), perhaps slight departures from the strict reproduction cost standard might be allowed. SBC at 32.[1] For example, Verizon and SBC suggest that some (but not all) of the network changes that it is planning in the next few years might be reflected in the "revalued" network. Shelanski (Verizon) Decl. ¶ 22; SBC at 31. But these changes concede the central flaw

[1] SBC declines, however, to indicate how red its face would need to be before it would reject a reproduction cost estimate for a piece of obsolete equipment in favor of an unspecified replacement value.

in the reproduction standard without offering any meaningful cure. Willig Reply Decl. ¶ 21. By allowing rates to reflect near-term changes to the existing network, the Bells implicitly recognize that the existing network design is *not* optimal and can be improved. But at the same time, the improvements that would be permitted—only those actually planned by the incumbent in the next few years—are patently insufficient to achieve the level of efficiency that can be obtained over the long run, when all sunk costs are variable. *Local Competition Order* ¶ 677.

BellSouth's "alternative" to the standard of reproduction costs also concedes its illegitimacy without offering any meaningful improvement. BellSouth proposes a "blended" approach that would allow incumbents to recover *both* the costs of all upgrades planned by the incumbent over an "objective time horizon (e.g., three to five years)"—*i.e.*, the technologies "that will actually be deployed as new facilities and equipment are needed to meet growth or as existing facilities/equipment are replaced," BellSouth at 19 – *and* the costs of the equipment "not being upgraded," including assets whose costs are sunk, *id.* at 15-16. Like BellSouth's primary proposal, however, this alternative approach would take as given the incumbents' "current network systems, routes, equipment locations, etc.," *id*. at 16, "expected incumbent costs," *id*. at 17, "real-world network attributes and cost inputs," *id*. at 18. And the result must be presumed to be efficient as a matter of law even if the costs are inflated by "past inefficiencies" that result from "choices made in the past." *Id*. at 30-31. Indeed, whenever the UNE prices set by a state commission result in "widespread use" of the "platform" of UNEs ("UNE-P" by CLECs, the input values underlying the UNE prices should be found to be inefficiently *low*, and the UNE prices increased until "widespread use of UNE-P" is choked off. *Id*. at 30.

This results-driven approach, if anything, is even worse than reproduction costs. It would allow ILECs to recover the higher costs of piecemeal capacity additions that are economically rational only because much of the embedded investment is sunk in the short run—*e.g.*, add-on

switching capacity, multiple undersized cables, piecemeal replacements of telephone poles, structure sharing percentages that reflect the pre-existing character of existing parallel utility lines—without valuing the *embedded* assets at levels that reflect their sunk character. Willig Decl. ¶ 65; Klick Reply Decl. ¶¶ 33-34.

B. There Is No Legitimate Basis For Any "Presumption" That The Incumbents' Book Costs And Current Practices Are Equivalent To Long-Run Forward-Looking Costs And Practices.

With the Bells' own economists on record against the reproduction cost standard, the Bells' comments do not even attempt a principled defense of that standard. Instead, they suggest that reproduction costs and forward looking economic costs have magically converged—*i.e.*, that retail price cap regulation and local competition justify a presumption, perhaps even an *irrebuttable* presumption, that existing networks are efficient. The Bells argument is little more than claiming white is black.

Price Caps. In its opening comments, AT&T sponsored three declarations that discussed the well-established shortcomings of price cap regulation and explained why "price caps" are not sufficient basis to presume that existing incumbent network design and operation is fully efficient. Willig Decl. ¶¶ 51-58; Klick Decl. ¶¶ 21-28; Selwyn Decl. ¶¶ 12-28. The Bells' comments, by contrast, offer little more than the bromide that price caps, by weakening the direct link between an incumbent's costs and rates, create incentives for *some* improvement in efficiency. *See, e.g.*, Verizon at 26; Aron-Rogerson (SBC) Decl. at 41-43; Kahn-Tardiff (Verizon) Decl. ¶ 10. This proposition, even if true, would not begin to justify the use of reproduction or embedded costs as a surrogate for long run incremental costs.

First, price cap regulation, even in its purest form, is still a far weaker goad to efficiency than truly competitive or contestable markets. The penalty for inefficiency in competitive markets can be, and ultimately will be, the demise of the business. The penalty for inefficiency

imposed by price cap regulation is far more attenuated. Klick Decl. ¶ 24; Klick Reply Decl. ¶¶ 16-18; Willig Decl. ¶¶ 53-54; Willig Reply Decl. ¶¶ 40.

Second, pure price cap regulation does not exist in practice. Price cap regulation, as actually implemented, is riddled with exceptions and loopholes that allow the regulated carrier to gain additional pricing flexibility by reporting higher costs, and which thus preserve the link between the firm's costs and rates. The price cap rate ceiling is always subject to change by the regulator—and the typical basis for altering the index is that a company's costs have increased at a greater rate than the index. By overinvesting in network capacity, the incumbent provides itself with a powerful argument to seek adjustments to the index that would allow the incumbent to increase its rates. Klick Decl. ¶ 25; Klick Reply Decl. ¶¶ 20-21; Selwyn Decl. ¶¶ 12-28; Selwyn Reply Decl. ¶¶ 9-12; Willig Decl. ¶ 55; Willig Reply Decl. ¶ 41; *see also Verizon*, 535 U.S. at 487 (price caps "do not eliminate gamesmanship").

Third, price cap regulation does not eliminate the incentive and ability of local carriers to shift their reported costs among categories of service—and, in particular, to misallocate revenues out of the services that are subject to price caps, to misallocate costs to those services, and to target efficiency improvements away from those services. Hence, adoption of "actual cost" or reproduction cost ratemaking would allow incumbent carriers to force CLECs to bear a disproportionate share of existing inefficiencies. Selwyn Decl. ¶¶ 21-28; Selwyn Reply Decl. ¶¶ 13-16.

Fourth, even if price caps somehow managed to create meaningful incentives for the Bells to optimize their networks, there is a clear distinction between the efficiency of the overall network and the efficiency of the subset of the network used to provide UNEs. Competitive carriers are now entitled to lease at TELRIC-based rates only a fraction of the capabilities of the "existing" network. In the *Triennial Review Order*, the Commission eliminated unbundled

access to significant portions of the incumbents' networks, including the broadband capabilities of hybrid loops, FTTH loops, and the loops used to serve enterprise customers. The *Triennial Review Order* also eliminated access to many dedicated and shared transport facilities. One simply cannot "presume" that the optimal network for the Bells' multi-product output mix would coincide with the most efficient network for providing the UNEs at issue here. Selwyn Reply Decl. ¶¶ 5-8; Willig Reply Decl. ¶ 46. For example, pushing fiber further into the existing networks to provide broadband data services may make perfect sense for the incumbents, but deployment of fiber may be needless and inefficient for the narrowband UNEs being offered to competitive carriers. Selwyn Reply Decl. ¶¶ 47, 55; Willig Reply Decl. ¶ 46. Likewise, it may be efficient for incumbents to deploy capacity today to serve future demand, but the costs of those "existing" facilities must be charged to the future ratepayers that use the capacity, not in the lease rates paid by current UNE purchasers. Willig Decl. ¶¶ 88-89. Forcing competitive carriers to pay the cost of reproducing network facilities that they do not use violates both the antidiscrimination provision of section 251(c)(3) and fundamental principles of cost causation. *See Local Competition Order* ¶ 691 ("Costs must be attributed on a cost-causative basis. Costs are causally-related to the network element being provided if the costs are incurred as a direct result of providing the network element or can be avoided, in the long run, when the company ceases to provide them."); *Alabama Electric Cooperative, Inc. v. FERC*, 684 F.2d 20, 27 (D.C. Cir. 1982) (charging non-cost-based rates discriminatory).

Fifth, perhaps the most important shortcoming of price cap regulation as a means of forcing existing networks into efficient configurations stems from the sunk nature of much of the investment needed to provide telecommunications services. NERA (BellSouth) Decl. ¶ 87. All agree that under prior rate-of-return regulation, incumbent carriers had powerful incentives to deploy excess capacity because they earned profits on such investments. This excess capacity,

however, does not simply disappear under price caps. To the contrary, it remains in the existing networks because the incremental costs of carrying excess capacity in the short run are far less than the incremental costs of removing it. And where demand has been relatively flat or declining, that short run excess capacity will persist indefinitely. Klick Reply Decl. ¶ 22; Willig Decl. ¶ 57; Willig Reply Decl. ¶ 42.

This difficulty is just a specific instance of a broader principle. When an incumbent invests in a sunk, long-lived asset, that investment necessarily will inform future investment decisions. Klick Reply Decl. ¶ 24; Willig Decl. ¶¶ 55-56; Willig Reply Decl. ¶¶ 43-45. The existence of the sunk asset will cause the incumbent to make investment decisions going forward that, while perhaps efficient on the basis of short run considerations, do not result in a network that is fully optimized to serve current demand. For example, if an incumbent has deployed technology that remains capable of providing service today but is no longer the most cost-effective technology, the inefficient technology will persist in the incumbent's network because it is cheaper to leave that technology in place than to replace it. Similarly, outside plant that is no longer necessary because of changes in where service is demanded will remain in place until it is more costly to maintain it than to remove it.

Verizon's economist concedes this point:

> The mix of facilities and technologies that the ILEC will purchase going forward will necessarily be informed by its existing network configuration and technology. . . . Thus, for example, even if a carrier starting from scratch might deploy a substantial amount of technology known as GR-303 as its switching interface, it may well be inefficient for an ILEC to do so because, among other things, using GR-303 might require it to incur additional costs such as changing other incompatible technologies in its network or developing new operations support systems.

Shelanski (Verizon) Decl. ¶ 30. So too do the other incumbent experts. *See* Aron-Rogerson (SBC) Decl. at 19 ("since the ILEC is not able to replace its entire plant at once, but instead does so incrementally over time, the ILEC . . . is necessarily constrained in its ability to adopt new

technology than is a hypothetical new entrant."); NERA (BellSouth) Decl. ¶ 65 ("For reasons stated earlier, [the existing incumbent network], at any given point in time, contains vestiges of successive generations of technology and managerial practices.").

Sixth, any beneficial incentives that price cap regulation may create for network efficiency are likely to be overridden by expressly linking UNE prices to existing network design. *Verizon*, 535 U.S. at 512. Quite obviously, the reproduction cost standard advocated by the incumbents would mute, if not eliminate altogether, the hypothesized benefits of price cap regulation. The incumbents would be able to recover their costs, whether or not they were incurred inefficiently, through the lease rates they charge their competitors. *Id.* Indeed, taken to its logical extreme, the Bells' "reproduction cost" standard would entitle them to a competitive return on capital for all of their assets (regardless of whether "used and useful" or "prudent"). Selwyn Reply Decl. ¶¶ 5-8; Willig Reply Decl. ¶¶ 47-48. In contrast, TELRIC-based rates provide no such anticompetitive incentive. TELRIC prices are not influenced by the actual investment or operational decisions of the firm, but are set on the basis of efficient costs. *Id.*¶ 47.

Intermodal Competition. The proposition that the incumbents are already subject to effective "facilities-based" competition (and therefore, can be presumed to have adopted efficient network design and practices) would be laughable if this argument did not have the potential to preclude such competition from emerging altogether. *See* BellSouth at 19; NERA (BellSouth) ¶ 66; Qwest at 21-22; Weisman (Qwest) ¶¶ 18-22; SBC at 25-26; Aron-Rogerson (SBC) at 39-43; Verizon at 26-27; Kahn-Tardiff (Verizon) ¶ 10; Shelanski (Verizon) ¶ 16. The Commission in the *Triennial Review Order*, after thoroughly considering whether there were alternative providers of the network elements at issue, concluded that there were not. Cable telephony serves only a small fraction of the country, and its long-term prospects for expansion are in grave doubt. *Triennial Review Order* ¶¶ 52, 222, 229. Although wireless services are more

ubiquitous, consumers do not view them as a substitute for local, wireline services. *Id.* ¶ 230. VoIP has yet to meet the full quality, safety and customer protection standards of wireline local service, it has gained only a handful of customers to date, and is only available to the small fraction of consumers that have also paid for broadband Internet access.[2]

As Professor Willig explains (¶ 51), the lack of existing competition also provides a complete response to the claim that TELRIC is impeding voluntary "wholesale" arrangements. Kahn-Tardiff (Verizon) Decl. ¶ 13. This is an astonishing claim in light of the fact that the Bells view a *decrease* in wholesale UNE business as a "positive" financial trend.[3] The reason that the Bells have this view should be obvious. The Commission has unbundled only those elements for which it has found that multiple competitive supply is economically infeasible. In those circumstances, incumbent carriers have absolutely no incentive to provide access to their local networks at rates, terms and conditions that would threaten their current ability to earn supracompetitive rates. *Local Competition Order* ¶ 141.

C. In Any Event, Verifiable Data And Models Needed To Implement The Reproduction Cost Standard Do Not Exist.

The "models" needed to implement the Bells' alternative approaches are vaporware. In the Commission's *Local Competition* proceeding, the Commission had before it four fully operable TELRIC models (HAI, BCM, BCM2, and CPM) to examine. *Local Competition Order* ¶¶ 794-96. Here, by contrast, despite saying how easy it is to implement the reproduction cost standard, the Bells have offered nothing in the way of models to implement the costing approach

[2] VoIP is a *protocol* for transmitting information over facilities, and VoIP providers use the incumbents' local loops and transport facilities to originate and terminate calls. Vonage, the nation's largest provider of VoIP services, claims about 50,000 total lines – about one-fortieth of one percent of the mass-market total. *See, e.g.,* www.vonage.com/corporate/press_index.php?PR=2003_09_23_0.

[3] *See* http://www.sbc.com/Investor/Financial/Earning_Info/docs/4Q_03_IB_FINAL.pdf (p. 7); http://www.sbc.com/Investor/Financial/Earning_Info/docs/4Q_03_slide_bw.pdf (p. 11).

they advocate. The Bells are asking the Commission to buy a pig in a poke. Klick Decl. ¶¶ 58-74 Klick Reply Decl. ¶ 56.

The reason for the Bells' failure to offer a working "reproduction cost" model is obvious: comprehensive accurate data needed to implement this standard simply do no exist. *Verizon*, 535 U.S. at 517-18 (recognizing inaccuracy of the incumbents' records). For example, the Bells' investment records for hard-wired central office equipment are bloated with "phantom" assets, and there is no reason to believe that the ILECs' records for other classes of assets are any more reliable. *Continuing Property Records Audit* ¶ 1 ("upon a physical examination of the companies' central offices, neither company personnel nor Bureau auditors were able to locate certain central office equipment which is recorded in the companies' books and accounts"). For outside plant, the incumbent carriers' records reflect outdated cable routes and/or cable descriptions, and include redundant or duplicate plant. Klick Decl. ¶¶ 58-74. The reason is that, before the mid-1990s, the incumbents' outside plant records were all in hard copy form. *Id.* ¶¶ 60-63. When the records were began to be computerized, the incumbents rarely went back and tried to incorporate the historical records—which themselves had been modified numerous times. Further, because of poor record keeping, plant that has been retired can still be shown (and often is shown) as existing on outside plant cable diagrams. Klick Decl. ¶ 62; Klick Reply Decl. ¶ 54.

Most fundamentally, the incumbents do not maintain records that can accurately describe, in any sort of readily retrievable and usable fashion, the actual quantities and locations of cables, poles, conduits, trenches and cable types that are currently in place in the ground today in any given study area. Klick Decl. ¶¶ 68-74; Klick Reply Decl. ¶¶ 54, 56. Rather, "these records are maintained only for broad categories of plant" and cannot be used to determine accurate per-line costs. Bryant Essay at 4.

A reproduction cost standard would also give the Bells the opportunity to engage in strategic behavior concerning the data needed to implement it. *Cf.* Qwest at 29-30; SBC at 34-35; Verizon at 106-07. In nearly all instances the only sources of data on the actual configuration, routes and technology mix embedded in the existing Bell networks are the Bell companies themselves. And, contrary to the Bell's experts, the Bells would have strong incentive to manipulate or conceal those data. Weisman (Qwest) Decl. ¶ 46 ("This incentive to overstate costs is not necessarily present in an environment in which rivals have the option to self-provision their own networks, purchase network capacity from a third-party, or lease network elements from the incumbent providers."). As Professor Willig explains (¶ 84), competitive carriers do *not* have the option of self-provisioning the network elements at issue or leasing them from third-parties. Thus, the Bells have every incentive to manipulate the data that only they control in a way that is most likely to raise the cost of access to their bottleneck facilities. *Id.* ¶ 55.

Verizon's proposal to choke off discovery in UNE cases confirms this. At the same time that the Bells advocate a standard that would exponentially increase the amount of necessary discovery—for the only way that competitive carriers could develop their own reproduction cost models and test the models of the Bells is to obtain access to the data that the Bells keep that describes their networks—Verizon asks the Commission to subject competitive carriers to onerous procedural rules that would effectively deny the CLECs access to such data. Verizon at 106-08. Instead, Verizon says that the Bells should be required to give competitive carriers only certain "basic"—*i.e.*, highly aggregated and incomplete—information. *Id.* at 106. No further discovery of the Bells would be allowed "without a showing of cause." *Id*. at 107. No further discovery could even be sought until *after* initial cost studies are filed (*id.* at 108)—*i.e.*, *after* the time when the information is most critically needed. Moreover, the amount of discovery

permitted to competitive carriers would be capped at an arbitrary level and an arbitrary time frame. *Id.* at 109. The rawness of Verizon's advocacy confirms what would be in store for the Bells' customers and competitors if the Commission resurrected the Bells' reproduction cost standard. The Bells would ruthlessly exploit the "informational imbalance" inherent in the reproduction cost standard, *Notice* ¶ 61, to quash any competition that could survive even a fair application of that standard.

II. THE BELLS' CONCEPTUAL CRITICISMS OF TELRIC ARE BASELESS.

The Bells' criticisms of TELRIC are as empty as their case for reproduction costs. Even if the Bells could demonstrate some shortcomings with TELRIC—which, as explained below, they have not—that would not justify abandoning that standard in favor of the fundamentally flawed reproduction cost standard. The ultimate question for the Commission is not whether TELRIC is perfect, but whether the proposed alternatives are better. For the reasons explained above, that is not a close question.

In all events, the Bells' attacks on TELRIC are simply a repackaging of the arguments that were previously rejected by the Commission and the Supreme Court. Indeed, as the Supreme Court recognized, the Bells' real complaint is not with TELRIC, but with *any* pricing standard that replicates the workings of a competitive market and excludes the costs of inefficient operations and network design.

A. TELRIC Is Fully Compensatory In Theory.

The Bells' main attack on TELRIC is essentially an attack on competitive markets. The Bells argue that TELRIC assumes the continual reconfiguration of networks to reflect advances in efficient technology and network design, an assumption that cannot be achieved in reality because network investments made by incumbent carriers are continually rendered obsolete by technological advances. Incumbent carriers, the Bells contend, cannot take full advantage of these new technological advances because much of the network investment is sunk. Thus, the argument goes, incumbents never can achieve the level of efficiency that a new entrant (or an "ordinary" firm) could achieve; ergo, TELRIC-based rates systematically prevent them from recovering efficiently incurred costs. BellSouth at 10-11, 24-25; NERA (BellSouth) Decl. ¶¶ 19, 45, 72-74; Qwest at 22-23; SBC at 2-3, 15-16; Aron-Rogerson (SBC) Decl. at 19-21; Verizon at 4, 35-39; Kahn-Tardiff (Verizon) Decl. ¶¶ 17-20; Shelanski (Verizon) Decl. ¶¶ 6-11, 20-24, 36.

The same argument, however, was a centerpiece of the Bells' unsuccessful challenge to TELRIC at the Supreme Court:

> [The incumbents'] argument is that TELRIC will result in constantly changing rates based on ever cheaper, more efficient technology; the incumbents will be unable to write off each new piece of technology rapidly enough to anticipate an even newer gadget portending a new and lower rate. They will be stuck, they say, with sunk costs in less efficient plant and equipment, with their investment unrecoverable through depreciation, and their increased risk unrecognized and uncompensated.

Verizon, 535 U.S. at 518. The Supreme Court found this argument unpersuasive in 2002. *Id*. at 504-07. The Bells have offered no better reason for crediting it here.

First, the Bells continue to overstate the level of efficiency demanded by TELRIC. As the Supreme Court observed, TELRIC does not assume optimal efficiency. *Verizon*, 535 U.S. at 504-07. Most notably, TELRIC takes as given the incumbents' existing wire center locations even where an efficient carrier would employ a different architecture. *Id.* at 505. Thus, TELRIC cost models assume the same number of switches an incumbent employs (even when fewer switches might lower overall costs) and the need to connect those switches with transport facilities. Further, the location of the existing wire centers places a significant constraint on "optimizing" the placement of outside plant and interoffice transport. *Id.*

Second, TELRIC-based rates ordinarily remain in effect for several years. Thus, advances in technology that occur over that period are not "automatically" reflected in UNE rates, but are incorporated in subsequent rate proceedings only after a significant lag. *Id.* at 505-06.

Third—and most fundamentally—TELRIC-based rates would be fully compensatory *even if* TELRIC, as implemented, effectively required the continual and instantaneous readjustment of UNE rates to reflect the full potential effect of all changes in technology and other cost determinants, without regard to any existing constraints the incumbents face in optimizing their networks in the short run. Even the most rigorous and uncompromising form of

the TELRIC standard would be no more onerous than the pricing constraint imposed on incumbent firms by markets that are fully competitive or contestable. As Professor Willig explains, in competitive or contestable markets, a company can charge prices for services that cover only the costs of providing those services in the most efficient manner, even if the company actually paid more for the equipment it uses to provide that service. Willig Decl. ¶¶ 42-43; Willig Reply Decl. ¶¶ 60-62. Competition in such markets ruthlessly disallows any recovery of historical costs, for no current rival will refrain from competing via a final-product price that covers only the forward-looking costs of its investment, whether or not these costs exceed historical costs. Because economic efficiency requires the same prices that would be set in competitive or contestable markets, UNE prices must reflect the forward-looking costs of efficient operation as well, not historical, embedded or reproduction costs. Willig Decl. ¶¶ 19-31; Willig Reply Decl. ¶¶ 60-62.

Ultimately, the Bells' economists confirm this. They agree that (1) the goal of UNE pricing is to "replicate" the workings of competitive markets, Weisman (Qwest) Decl. ¶ 40; NERA (BellSouth) Decl. ¶ 73; (2) in fully competitive or contestable markets prices are driven down toward long run costs, Shelanski (Verizon) Decl. ¶ 35; and (3) in the long run, all inputs are variable, NERA (BellSouth) Decl. ¶ 55. These concessions are well taken because their logic is unassailable. A firm that fails to adopt current technologies or practices that lower its costs—or to set its prices at levels that fully reflect current technologies or practices—renders itself vulnerable to competitors or entrants that do so. Hence, the threat of such entry in competitive or contestable markets necessarily caps the rates that incumbents can charge at the level of the lowest costs achievable by current technology and practices. As BellSouth's economists aptly explain, "[i]f competitors can deploy new services or the same services at lower costs,

particularly if the incumbent fails to do so, then there will be greater pressure [for the incumbent] to accelerate deployment of new technologies into the network." NERA (BellSouth) Decl. ¶ 74.

The TELRIC standard is compensatory in the same way that pricing in fully competitive or contestable markets is compensatory. Forward-looking investment decisions are based on the firm's best expectations of future trends in prices, demand, technological innovation, and equipment values. Willig Reply Decl. ¶¶ 66-68. Thus, if a firm in a competitive market expects these prices and values to decline, the firm will reflect this expectation in the prices it offers to pay for current equipment and the depreciation charges the firm recovers through the prices it charges its own customers. The Commission's TELRIC rules require state commissions to reflect the same considerations in determining the incumbent's depreciation charges and cost of capital. Hence, TELRIC pricing, just like competitive market pricing, provides for full *ex ante* compensation of investments. Gregory Rosston and Roger Noll, *The Economics of the Supreme Court's Decision on Forward Looking Costs*, I REVIEW OF NETWORK ECONOMICS 81, 84 (Sept. 2002) ("[I]f depreciation lives and risk adjustment rates are calculated reasonably accurately, firms will be able to recover the costs of efficient investments [and] [t]hus the TELRIC approach, theoretically, is able to cope with the problems that worry its opponents.").

Of course it is always possible that previous expectations will turn out to be incorrect and for a firm to find, afterwards, that it has incurred uncompensated costs. But this is an *ex post* risk that any firm in a competitive market must face, and a risk that the 1996 Act therefore requires incumbents to face as well. Willig Reply Decl. ¶¶ 66-68. In the real world, firms almost always make investment decisions in an environment of uncertainty. Neither competitive markets nor TELRIC can immunize an incumbent against unforeseen losses.

Despite the virulence of the Bells' anti-TELRIC rhetoric, the Bells' economists ultimately concede that the "theor[y]" of TELRIC is sound and that, if depreciation lives and

capital costs reflect appropriately anticipated declines in the value of assets after their acquisition, TELRIC-based rates will allow the incumbents full recovery of their efficient investment. Kahn-Tardiff (Verizon) Decl. ¶ 21; Shelanski (Verizon) Decl. ¶ 14; *see also* Kahn-Tardiff (Verizon) Decl. ¶ 19 (conceding that even where investment requires "heavy sunk costs" and there is "continuous technological change" that can be expected to devalue that investment, firms will invest in the "most recent technology from the ground up" if they can charge rates that cover forward-looking "depreciation . . . and rates of return"). Instead, these economists retreat to a second line of defense: that "in practice" regulators have not set the appropriate, forward-looking depreciation lives. Kahn-Tardiff (Verizon) Decl. ¶ 21. But the solution to this problem (if it existed) would not be to jettison TELRIC, but simply to implement it with appropriate depreciation lives.

Moreover, the Bells have failed to establish even this more modest criticism. The incumbent economists offer nothing more than rank speculation for their empirical claim that existing depreciation lives are inadequate. As AT&T's experts show, the hard evidence is to the contrary. Lee Decl. ¶¶ 15-21 & Att. 4-5; Willig Reply Decl. ¶ 72. For example, incumbent depreciation reserves have been *increasing*. *Id.* As the Commission has recognized, "[t]he depreciation reserve is an extremely important indicator of the depreciation process because it is the accumulation of all past depreciation accruals net of plant retirements. As such, it represents the amount of a carrier's original investment that has already been returned to the carrier by its customers." *AAD Report* at 5-6. Thus, this increase in depreciation reserves is powerful evidence that existing Commission-prescribed depreciation lives are, if anything, too short.

B. TELRIC Is Fully Compensatory In Fact.

Verizon and SBC have filed "empirical" analyses purporting to show that UNE rates have failed to provide adequate compensation to cover incumbents' historical costs. Verizon at

94-96; Garzillo (Verizon) Decl.; Aron-Rogerson (SBC) Decl. at 28-32. These analyses are as unsound as the Bells' theoretical arguments.

First, the comparison that underlies these analyses is meaningless. ARMIS data are records of the Bells' book or embedded costs, maintained as required by the Commission's uniform system of accounts. These data are irrelevant to any rational determination of forward-looking costs, *inter alia*, because ARMIS records include assets that (1) no longer even exist at any identifiable location in the Bells' network; (2) are now excessive, inefficient or obsolete; (3) have been removed from the network or abandoned in place (e.g., copper cable "overlaid" with fiber cable and taken out of service) without being removed from the company's account books; or (4) are used jointly or in common not only to provide UNEs, but also to provide other non-UNE or non-regulated outputs, such as long distance or broadband service. Menko, McCloskey & Brand Reply Decl. ¶ 11; Selwyn Reply Decl. ¶¶ 30, 50.

The Supreme Court recognized these problems in *Verizon*. The book cost data maintained by the incumbents "were geared to maximize the rate base with high statements of past expenditures and working capital, combined with unduly low rates of depreciation," *Verizon*, 535 U.S. at 469, 499. Hence, the "'book' value or embedded cost of capital presented to traditional ratemaking bodies" was grossly overstated. *Id.* at 517-18. Moreover, aside from the manipulation of the rate base and depreciation rates, any overinvestment representing a "cost difference" between embedded costs and forward-looking costs

> is an inefficiency, whether caused by poor management resulting in higher operating costs or poor investment strategies that have inflated capital and depreciation. If leased elements were priced according to embedded costs, the incumbents could pass these inefficiencies to competitors in need of their wholesale elements, and to that extent defeat the competitive purpose of forcing efficient choices on all carriers whether incumbents or entrants. The upshot would be higher retail prices consumers would have to pay.

Id. at 511-12.

These problems are exacerbated, not cured, by price cap regulation. As Dr. Selwyn explains (¶¶ 9-12), price cap regulation at the state level gives the incumbents powerful incentives to shift costs to "regulated" services and away from services deemed competitive. This in turn results in excessive costs being recorded in the books of account that are used to generate the purported cost of the UNEs at issue.

In this regard, the Bells are their own worst enemy. In seeking to defend their special access services, they have argued that rates of return for those services derived from ARMIS data are "economically irrational" and do not reflect economic costs.[4] These are the same ARMIS data on which the Bells base their empirical comparisons of TELRIC prices and RBOC "costs."

But the flaws in the Verizon and SBC analyses go well beyond their reliance on ARMIS data. Verizon's analysis, sponsored by Patrick Garzillo, relies upon numerous assumptions, data selections, methods and calculations, many of which are clearly faulty. Menko, McCloskey & Brand Reply Decl. ¶¶ 13-41. To begin with, the data relationships relied on by Verizon (developed from the ARMIS 43-04 report) are likely no longer accurate due to the Commission's order freezing category relationships and separations factors as of 2000. *Id.* ¶ 15. Moreover, Verizon's calculation of the purported costs associated with the provision of UNE loops and UNE-Platform (the numerator in Verizon's development of unitized costs) are tainted by errors, including in the calculation of loop, switch and transport investment and non-plant specific expenses. *Id.* ¶¶ 16-34. Further, Verizon's calculations of loop count (the denominator in developing unitized costs) have demonstrably understated the number of loops. *Id.* ¶¶ 35-41.

The Aron-Rogerson comparison of UNE-P prices and embedded costs is also worthless. SBC Comments, Exhibit A. Even putting aside the irrelevance of comparing TELRIC to

[4] *In re AT&T Corp. et al.*, D.C. Cir. No. 03-1397, Response of Intervenors in Opposition to the Petition for a Writ of Mandamus, at 13 (footnotes omitted) (filed January 9, 2004).

embedded costs, *see* Menko, McCloskey & Brand Reply Decl. ¶¶ 11-12; Selwyn Reply Decl. ¶ 30, the SBC analysis depends on a host of assumptions, cost allocations and financial calculations that are insufficiently presented, let alone explained, making it impossible for any party or the Commission to audit the analysis. For example, the analysis does not specify whether the base ARMIS data used reflected total company results (*i.e.*, encompassing jurisdictionally interstate as well as intrastate services), intrastate only results following jurisdictional separations, intrastate results exclusive of non-regulated operations or some combination of these alternatives. With respect to other aspects of the analysis, readers are told only that (1) the ARMIS data were "adjusted by LECG analysts" in some unspecified fashion; (2) that revenues for comparison were drawn from an entirely separate source (the investment house Commerce Capital Markets) that may or may not be consistent with the services and outputs reflected in the cost data; and (3) capital expenditures were subject to an allocation process that has not been presented. Aron-Rogerson (SBC) Decl. at 29-31.

C. Carrier-of-last-resort ("COLR") Obligations Do Not Call TELRIC Into Question.

After arguing vociferously that their networks are the paradigm of efficiency, the Bells reverse field, arguing that their existing inefficiencies should be excused because of carrier-of-last-resort ("COLR") obligations. *See, e.g.*, SBC at 25; BellSouth at 8; NERA (BellSouth) Decl. ¶¶ 22-25, 48. COLR obligations, the Bells assert, force them to maintain more spare capacity (and thus lower fill factors) than they would otherwise choose. Thus, argue the Bells, the competitive market standard is unfair to them because regulation constrains them from achieving the lowest possible cost structure.

This argument suffers from several independent flaws. Foremost, it rests on nothing but empty speculation. The Bells have offered not a shred of evidence that state regulators require them to maintain substantial excess capacity, or that existing retail rates fail to cover those extra

costs. Nor is there any reason to attribute the bloated level of spare capacity that the Bells have advocated in state UNE pricing proceedings to any operational requirements imposed by state regulators. The Bells can point to no law that requires them to maintain a level of capacity necessary if every consumer in the United States immediately demanded telephone service from the Bells. Rather, what is generally required is sufficient capacity to meet reasonably anticipated demand.

Finally, even if the Bells had documented that costs imposed by COLR obligations are not fully recovered through the Bells' retail rates, that would not be grounds for recovering such costs via wholesale UNE rates. Willig Reply Decl. ¶ 76. As the Commission properly recognized in the past, such a surcharge would potentially impede the development of local competition. *Local Competition Order* ¶ 705. Rather, these costs (if any) should be recovered through appropriate, competitively neutral universal service contributions as required by the 1996 Act. *Id.* ¶ 707; *see also* Gregory Rosston and Roger Noll, *The Economics of the Supreme Court's Decision on Forward Looking Costs*, I REVIEW OF NETWORK ECONOMICS 81, 86 (Sep. 2002) ("Any pricing method that allows the mistakes of the past to be made up in UNE prices that are too high is inherently anticompetitive. . . . The FCC attempted to deal with [the problem of inefficient regulatory obligations] by requiring a competitively neutral fee to make up for any embedded costs that are not paid for through the combination of ILEC wholesale and retail sales.").

D. The Assumptions Of TELRIC Are Internally Consistent.

The Bells also claim that the Commission's TELRIC rules are internally inconsistent. Specifically, the Bells argue that:

(1) The TELRIC assumption of a "competitive" market contradicts the TELRIC assumption that the supplier of UNEs achieves the economies of scale and scope

generated by serving all customer locations within a particular geographic area. Instead, the Bells argue, one should assume a smaller network that lacks the economies of scope and scale enjoyed by the incumbent carriers.

(2) The TELRIC assumption of a "competitive" market also requires a cost of capital that compensates for the business risks of a market with multiple facilities-based competitors.

(3) "Consistency" with the forward-looking cost standard requires that UNE prices include the "full costs" of "obtaining the rights of way and authorizations needed to build the network today from scratch."

See BellSouth at 14, 22-23; SBC at 3, 13-20, 57; Aron-Rogerson (SBC) Decl. at 18-21; Shelanski (Verizon) Decl. ¶ 14; Kahn-Tardiff (Verizon) Decl. ¶¶ 16-17. These arguments share a common flaw: they assume that TELRIC does or should seek to replicate the performance of markets that are perfectly competitive, in that they have numerous facilities-based competitors. This is incorrect.

The existence of multiple facilities-based within a market, although generally a sufficient condition for effective competition, is not a necessary condition. Markets also achieve competitive results when effectively *contestable.* Willig Decl. ¶¶ 23-24; Willig Reply Decl. ¶ 78. The contestable market standard "offers a generalization of the notion of purely competitive markets, a *generalization* in which fewer assumptions need to be made to obtain the usual efficiency results. Using contestability theory, economists no longer need to assume that efficient outcomes occur only when there are large numbers of actively producing firms. What drives contestability is the possibility of costlessly reversible entry." Willig Decl. ¶ 23 (citing authorities). As Professor Willig explained in his initial declaration, contestability doctrine is

more consistent with the structure of the local telephone market, and thus a more appropriate baseline for assessing "competitive outcomes." *Id.* ¶ 24; *see also* Willig Reply Decl. ¶ 78.

In a fully contestable market, service is provided by a single incumbent firm, and prices converge to LRIC. This framework is particularly apt here, for the network elements at issue are characterized by steep economies of scale and scope (*Triennial Review Order* ¶¶ 87-90), and often are provided by a single firm. Thus, the "single carrier" assumption reflected in the Commission's directive that TELRIC rates reflect all economies of scale and scope available to the incumbent is fully consistent with the competitive outcome that the TELRIC standard seeks to emulate.[5] Willig Reply Decl. ¶ 79.

The same logic disposes of the notion that consistency with TELRIC requires a cost of capital high enough to compensate for the risks of a market with multiple facilities-based competitors. Again, in a fully contestable market, the incumbent has its prices constrained not by the presence or competitive risks of multiple facilities-based rivals, but by the threat of competitive entry if (and only) the incumbent raises its prices above long run incremental costs. Willig Decl. ¶¶ 23-34; *see also* Willig Reply Decl. ¶¶ 78.

In light of these considerations, other regulatory bodies that have adopted rate standards designed to replicate the performance of perfectly competitive or contestable markets (*e.g.*, TELRIC and stand-alone cost) have *not* adopted the extravagant risk model that Verizon and the other Bells propose. Instead, those regulators have chosen to use cost of capital measures that reflect the forward-looking risks *actually* faced by the incumbent regulated monopolies. *See Coal Rate Guidelines—Nationwide*, 1 I.C.C.2d 520, 534-37 (1985), *aff'd*, *Consolidated Rail Corp. v. United States*, 812 F.2d 1444 (3rd Cir. 1987) (implementing stand-alone cost test with

[5] In reality, UNE rates are set in a more conservative manner than dictated by pure TELRIC theory. Modern TELRIC models typically assume only the incumbent's existing demand, not the demand of all existing, facilities-based local carriers.

cost of capital based on analyses of risks and capital costs of *incumbent* market-dominant carriers). Notably, in his above-described testimony endorsing stand-alone cost, Dr. Kahn never suggested that consistency with the "blank slate" assumptions of instantaneous entry and contestability underlying the stand-alone cost test required a risk premium over the cost of capital sufficient to compensate for the risks actually facing the incumbent carriers.

The supposed inconsistency asserted by the Bells concerning the costs of "obtaining the rights of way and authorizations needed to build the network today from scratch" is also illusory. Although their point is somewhat unclear, the Bells appear to be contending that the costs of obtaining such rights today would be substantially greater than the Bells themselves incurred in obtaining them, because easements and other real estate costs have skyrocketed over the years. This contention is fatally flawed. Appropriate application of the contestability standard seeks to determine the prices that an incumbent carrier would charge on the (counterfactual) assumption that there were no barriers to entry. Willig Reply Decl. ¶¶ 80-81. Under this framework, the appropriate costs are the costs that the incumbent would incur in efficiently acquiring the necessary rights-of-way. *Id.*

In this regard, the fees that municipalities and landlords charge competitive carriers currently for rights-of-way are not the appropriate benchmark for determining TELRIC-based rates. These entities have strong incentives to grant access to the "first mover" carrier, for all municipalities and landlords want telephone services to be provided to their residents. However, as the Commission confirmed in its *Triennial Review Order*, municipalities and landlords have little incentive to offer the same favorable terms to second mover competitive carriers and instead insist on discriminatory conditions for the necessary access. *Triennial Review Order* ¶¶ 205, 303-306. These are exactly the type of entry barriers that are not included in an

appropriate LRIC study that seeks to replicate competitive market outcomes. Willig Reply Decl. ¶ 81.

Notably, other regulators have reached this same conclusion in analogous circumstances. In applying the stand-alone cost standard to construction expenses, the Surface Transportation Board ("STB") and its predecessor, the Interstate Commerce Commission ("ICC"), have repeatedly disallowed similar costs when there was no evidence that the incumbent itself had incurred such costs—and, therefore, requiring a new entrant to bear such costs would constitute an impermissible barrier to entry. Thus, the ICC/STB have excluded from the hypothetical carrier's costs an "assemblage factor" (a premium paid to purchase contiguous parcels of land for a right-of-way), grade-crossing costs (costs associated with constructing bridges or overpasses across non-natural barriers such as public highways and railroad tracks) and expenses for permits, licenses, and compliance with environmental standards because the incumbent railroad did not encounter the same costs and obstacles. For example, the STB/ICC has disallowed costs for constructing bridges or overpasses across public highways because the incumbent railroad was conducting operations in that area before the highways were built – and the State, not the incumbent, had paid for any bridges or overpasses. Allowing costs that the incumbent itself did not pay, the STB/ICC ruled, would violate the fundamental assumption of unimpeded entry and exit underlying the theory of contestability. *See, e.g. Arizona Public Service Co. v. Atchison, Topeka & Santa Fe Ry. Co.*, 2 S.T.B. 367, 385-387 (1997); *West Texas Utilities Co. v. Burlington Northern R.R. Co.*, 1 S.T.B. 638, 668-671 (1996), *aff'd sub nom. Burlington Northern R.R. Co. v. Surface Transportation Board,* 114 F.3d 206, 214 (D.C. Cir. 1997); *Coal Trading Corp. v. Baltimore & Ohio R.R. Co.*, 6 I.C.C.2d 361, 412-414 (1996); *Bituminous Coal – Hiawatha, Utah, to Moapa, Nevada*, 6 I.C.C.2d 1, 52-54 (1989).

E. TELRIC Properly Reflects Relevant Geographic And Locational Constraints.

The Bells contend that TELRIC fails to reflect relevant endogenous constraints that any carrier would face in providing telephone services, such the need to deploy outside plant to actual customer locations and the geographic constraints carriers face in laying outside plant. *See* NERA (BellSouth) Decl. ¶ 47; Qwest at 7-8, 30-32; SBC at 4, 20-24; Aron-Rogerson (SBC) Decl. at 18-19. This claim too is baseless.

This issue goes not to the merits of the TELRIC standard, but rather to the design of the cost models that implement TELRIC. Nothing in the TELRIC standard requires that UNE rates ignore relevant real world considerations that impact costs, such as where customers reside or physical barriers that might impact deployment of plant to customers. Willig Decl. ¶ 56. Thus, at most, the Bells' complaint is that implementation of TELRIC is faulty.

But even as to this narrower claim, the facts belie the Bells' histrionics. As Mr. Klick describes, TELRIC models are becomingly increasingly sophisticated in accounting for customer locations, customer services, geography and topography. Klick Decl. ¶¶ 56-57; Klick Reply Decl. ¶ 57. For example, modern TELRIC models capture cost associated with density differences with extreme precision. Bryant Essay at 11. Indeed, TELRIC cost studies often rely on "geocoded" data that provides the *exact* location of every customer. This in turn allows modelers to increase the realism with which they account for natural geographic obstacles such as rivers and mountains. Except in the most extreme cases, customers generally live in "clusters" located in geographic areas where the terrain is suitable for building (indeed, customers usually live in homes or apartment buildings). Customers are not clustered where natural features such as lakes or mountains would prevent building. Accordingly, modern TELRIC models that rely on detailed customer location data automatically account for natural obstacles to building telephone plant. Moreover, in each cluster (and where plant must be placed

to connect clusters), the cost models expressly incorporate highly detailed data regarding local soil conditions (rock, sandy, dirt), water table depths, and other terrain characteristics that affect the cost of building and installing telephone plant. Klick Decl. ¶ 57.

Of course, no cost model cannot atomistically replicate every feature of "the real world." *Id.* ¶ 46. Nor need it. The entire point of the exercise is to estimate the efficient costs of providing telephone service. To the extent that this can be done accurately by using simplifying assumptions, as all cost models do, it is perfectly appropriate to do so.

For example, although the amount and type of telephone plant reflects barriers that might occur within geographic areas where customers are clustered, the data needed to identify all such obstacles are obviously lacking. Accordingly, to ensure that sufficient telephone plant is reflected in the modeled network, modern TELRIC models already use algorithms and assumptions that build in significant amounts of extra cable for routing around and over obstacles. Likewise, "right angle routing" is a technique that assumes that cable travels only in straight lines (along north, south, east or west axes), and turns only at right angles. This assumption models how roads in most cities and towns are built. Moreover, where it departs from reality, it tends to produce estimates of cable plant that are conservatively high, because nonrectilinear routes generally reflect the existence of alternative shorter (diagonal, or "as the crow flies") routes. *See, e.g., Virginia Arbitration Order* ¶ 180.

Finally, AT&T must emphasize that concerns of geographic accuracy could not justify adopting a reproduction cost standard even if (contrary to fact) such a standard could be implemented with atomistic detail. Because reproduction costs are irrelevant to competitive price-setting under the Act, greater precision in their estimation is pointless. Willig Reply Decl. ¶ 52. As Verizon witness Alfred Kahn has noted, "[a]n approximation, even one subject to a wide margin of error, to the correct answer is better than the wrong answer worked out to seven

decimal places." I Alfred Kahn, THE ECONOMICS OF REGULATION 199 n. 39 (1970) (quoting William Vickrey, winner of the Nobel prize in economics in 1996). In any event, as described above, the Bells simply do not maintain records that can accurately describe, in any readily retrievable and useable fashion, what plant is in the ground today. And that is why, despite their claims about how accurate an "existing cost" model would be, the Bells have yet to proffer one to the Commission.

F. TELRIC Is Practical To Administer.

The Bells also claim that, because TELRIC seeks to determine the costs of building a "hypothetical" efficient network, TELRIC cost models are inherently hard to verify and easy to manipulate. Qwest at 7; Weisman (Qwest) Decl. ¶¶ 22-23; SBC at 20-24, 57-58; Verizon at 7-8, 28; Shelanski (Verizon) Decl. ¶ 18. Here again, the Bells pursue a claim that the Supreme Court considered and properly rejected just two years ago. *See Verizon*, 535 U.S. at 522 (considering and rejecting the Bells' claim that "TELRIC is too complicated be practical"). As the Court noted, "battles of experts are bound to be part of any ratesetting scheme," and "relative ease of calculation" is an arena where TELRIC is superior, not inferior, to the incumbents' alternative standards, which "preserve home-field advantages for the incumbents." *Id*.

In this proceeding, the Bells advance four arguments: (1) TELRIC-based rates vary widely from state to state, and these variations do not correlate with state-to-state variations in costs; (2) TELRIC-based rates have been generally trending downward since 1996; (3) state commissions in Qwest's territory made a variety of errors in setting the inputs to Qwest's UNE prices; and (4) the TELRIC standard allows state commissioners to set unduly low rates through opportunism or cowardice. Qwest at 13-14, 54; SBC at 20-24; Verizon at 7. The incumbents' new arguments are no more credible than their predecessors.

State-to-State Variations in UNE Prices. The "variations" in UNE rates claimed by the Bells have little or nothing to do with any fault with TELRIC. The scheme of "cooperative federalism" embodied in the 1996 Act, and the fact that costs differ significantly from state-to-state, inevitably will cause state-to-state variations in UNE rates regardless of what standard is employed. As the Supreme Court stressed in *Iowa Utilities Board*, the Commission's role in the 1996 Act is merely to set general standards for determining UNE rates: "[i]t is the States that will apply those standards and implement that methodology, determining the concrete result in particular circumstances." *AT&T Corp. v. Iowa Utilities Bd.*, 525 U.S. 366, 384 (1999). The variation that naturally results from this decentralized regulatory scheme, administered by 51 separate decisionmaking bodies, was further exacerbated by the substantial uncertainty over the interpretation (and even the survival) of TELRIC during the six years when the Bells tried to overturn the *Local Competition Order* in the courts. Klick Reply Decl. ¶¶ 104-05. Further, as Mr. Klick explains, substantial variation in UNE rates can result from differences in the amount of discovery permitted by the state commissions—another factor totally unrelated to TELRIC and inherent in the 1996 Act's allocation of ratesetting responsibilities. *Id.* ¶ 106.

The econometric analyses offered by SBC witnesses Aron and Rogerson and USTA witnesses Eisenach and Mrozek actually devastate the Bells' case. Drs. Aron and Rogerson assert that their regression analyses failed to show any adequate link between ARMIS embedded costs, Synthesis Model unit costs, or average line densities, on the one hand, and UNE-P prices on the other. Aron-Rogerson (SBC) Decl. at 36-38. From this, the authors conclude that "state commissions exercise their discretion in ways that are random with respect to costs." *Id.* at 36. Aron and Rogerson base this claim on a bizarre definition of statistical linkage: they assert that no statistically significant linkage exists unless the R-squared value is close to one—*i.e.*, that the independent variables account for nearly *100 percent* of the variation in the dependent variable.

This is absurd. Statistical relationships do not require that the independent variables in the regression—particularly a regression with only a handful of independent variables—account for anything approaching 100 percent of the variation in the dependent variable. Judged by a more meaningful and accepted test of statistical linkage, the regression coefficients and the *t* statistics, Aron and Rogerson's results actually show that there is a very strong and statistically significant relationship—at confidence levels of 95 percent to 99 percent—between UNE-P price and each of the three independent variables. Selwyn Reply Decl. ¶¶ 32-42. In short, Aron and Rogerson's regression analyses showed *precisely the opposite of what they were trying to prove*. *Id*. ¶ 41.

The Eisenach-Mrozek regression analysis proffered by USTA also refutes, rather than supports, their sponsors' position. The regression results show that the correlation between costs as measured by the HCPM model and UNE-P prices is in the range of 0.5, and *t*-statistic values are extremely high, reflecting confidence levels in excess of 99.99 percent. Selwyn Reply Decl. ¶¶ 43-46. In plain English, these results mean that the HCPM-based cost estimates explain approximately *half* of the reported state-to-state variation in UNE-P prices. This is a very powerful correlation, particularly because most of the UNE rates were based on cost models *other than* the HCPM, and because the HCPM uses nationwide expense factors and other averaged input values rather than more individualized and state-specific data. *Id*. ¶¶ 44-46.

Downward Trend in UNE Prices over Time. The downward trend towards lower UNE rates over time is also no evidence that TELRIC is flawed. *Cf.* Qwest 11-12; Verizon 6-7. To be sure, in the earliest TELRIC rate proceedings, state commissions did produce widely divergent rates; indeed, some states adopted absurdly high rates for certain UNEs. Many of the rate reductions are simply the result of state commissions climbing the "learning curve" and identifying previously overlooked deficiencies in the "TELRIC" studies submitted by the ILECs. Klick Reply Decl. ¶¶ 86-101. Further, in many instances, the rate decreases ordered are the

result of declines in input prices, increases in demand, or the combination of two. *Id.* The Bells can hardly argue otherwise, for many of the rate decreases that the Bells now assail were voluntarily proposed by the Bells themselves. *Id.* ¶ 87. This is particularly true for local switching, as the Bells reduced their rates in order to mitigate their losses from "reciprocal compensation" arrangements with carriers serving ISPs. *Id.* As a result of these trends, UNE rates (adjusted for cost differences) are converging in a more narrow range. *Id.* ¶ 108. Finally, rates have gone down because the relevant costs of provide UNEs have gone down. *Id.* ¶ 70.

Anecdotal Claims of Erroneous Input Determinations by State Commissions in Qwest Territory. Qwest asserts that state commissions have set a variety of cost inputs in UNE pricing cases at levels well below those consistent with TELRIC. These claims reveal more about Qwest than about the efforts of the state commissions.

Before considering the specifics of Qwest's claims, the Commission should be aware that Qwest has little credibility in these matters. In a recent appeal of the Arizona commission UNE rate decision, for example, Qwest informed a federal district court that the loop rates adopted by the Arizona commission were severely understated because they assume "that most of the roads in downtown Phoenix and Tucson are made of dirt."[6] That, of course, was not even remotely true. In fact, the Arizona commission's decision assumed that there are *no dirt* roads in the most densely populated areas of Arizona (including downtown Phoenix and Tucson), that *all* telephone cables in these areas would have to placed under or above existing streets, sidewalks, landscaping and other structures, and that nearly 80 percent of the time that would require cutting and restoring existing asphalt or concrete using the *most* expensive cable placement methods.[7]

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[6] Qwest Opening Br. on the Merits, *Qwest* v. *ACC*, Case No. CIV-02-1626 PHX-SRB, at 116 (D.Ct.Az., filed December 23, 2002).

[7] Response Br. on the Merits, *Qwest* v. *ACC*, Case No. CIV-02-1626 PHX-SRB, at 116 (D.Ct.Az., filed Feb. 28, 2002) (*MN Reply Br.*).

Qwest similarly distorts other state commission records. Qwest, for example, claims that the Minnesota commission adopted an adjustment that the Commission did not adopt in a universal service order. Qwest at 8, n.23.[8] Qwest also says that the commission relied only on "conclusory assertions." Here is what really happened in that proceeding. No party, including Qwest, disputed that the Minnesota commission should compute switching costs based on the switch investment developed by the Commission in 1999 for use in the Commission's universal service cost model. *MN Final Decision* ¶¶ 18-19. And no party disputed that that the amount of digital loop carrier equipment ("DLC") in a forward-looking network would be approximately 57.5 percent. *Id.* ¶¶ 123-26. The undisputed record evidence further showed that the Commission's 1999 switch investment implicitly reflected only 18.3 percent usage of DLC, rather than the 57.5 percent that would exist in a forward-looking network. *Id.* ¶ 125. Accordingly, the Minnesota commission properly rejected Qwest's proposal to make no forward-looking adjustment to the Commission's 1999 switch investment data, because it was clear, based on the undisputed record evidence, that making no adjustment would substantially understate the amount of DLC deployed in a forward-looking network. *Id.*

Qwest also erroneously asserts that the Minnesota commission adopted an "investment expense" based on no documentation. Qwest at 8, n.23, 28. What the Minnesota commission actually did was find that Qwest's studies were flawed and could not be relied upon. It found that those cost studies suffered from "many defects" and "systematically overestimate[d]" the relevant costs, *MN Final Decision* at 17, 19; *see also id.* at 107-08. Indeed, Qwest's proposed loop cost estimates, for example, were "approximately $75 per line more than Qwest's *embedded* loop costs. *Id.* at 18 (emphasis added). Thus, the Minnesota commission held that Qwest's cost

[8] Qwest appears to have missed the irony here. Qwest argues elsewhere in its comments that the Commission should *forbid* state commissions from relying on the findings in federal universal service proceedings. Qwest at 66-68.

models were "unacceptable" and would not be used "unless no other model is available to price a particular element." *Id.* at 19. Accordingly, the Minnesota commission turned to the cost model submitted by the competitors as an alternative to Qwest's flawed cost study.

One of the cost inputs used in the competitors' cost study – the cost of purchasing and installing xDSL equipment – was based on proprietary data obtained from competitors and vendors on the condition that the data would not be disclosed. Qwest argued that the lack of underlying data to support the cost of purchasing and installing xDSL equipment meant that the Minnesota commission was barred from relying on the competitors' cost study, and that the Minnesota commission thus had to use the estimates produced by Qwest's badly flawed non-TELRIC cost study. But the Minnesota commission correctly rejected Qwest's arguments, recognizing that the lack of underlying documentation does "not make the model . . . unverifiable." *MN Final Decision* at 132. On the contrary, the input—the cost of purchasing and installing xDSL equipment—was fully disclosed and transparent, and its accuracy was verified by other witnesses by comparison with other data on the costs of purchasing and installing such equipment. *Id.* Qwest, on the other hand, "despite its greater access to the market, provided no alternative pricing" for the input, a telling omission. *Id.*

Qwest also criticizes the Minnesota commission for adopting the AT&T/MCI non-recurring cost model on the basis of the professional judgment of the CLECs' experts. Again, Qwest fails to note that its own cost studies were not TELRIC-compliant because they "reli[ed] on outdated time studies, and [were] not forward-looking." *MN Generic Cost Decision* ¶ 285. And the Minnesota commission, using its expert judgment, determined that the record confirmed the accuracy of the CLECs' data, noting that the data were based in part on experts that "had experience with numerous local exchange companies including US WEST," and [contrary to

Qwest's studies] the time study determinations were fairly recent. *MN Final Decision* ¶ 278 & n.344 (citing AT&T witness's testimony).

Perhaps the most revealing thing about Qwest's anecdotes is how few there are. During the past eight years, state commissions have issued hundreds of UNE pricing orders and adjudicated tens of thousands of specific input issues. If the handful of examples offered by Qwest are the best examples of allegedly flawed state commission analysis, the TELRIC standard is robust indeed.

***Ad Hominem* Attacks on State Commissions.** Unable to offer any objective evidence that state commissions have systematically misapplied the TELRIC standard, both Qwest and SBC descend to *ad hominem* attacks on the state commissions themselves. Here again, the Bells' criticisms reveal more about their sponsors than their targets.

SBC asserts that state regulators seek to appropriate the incumbents' sunk investment by setting rates that are too low. Aron-Rogerson (SBC) Decl. at 22-23. SBC offers no support whatsoever for this reckless claim. SBC also neglects to explain how, even if state regulators were as corrupt as it suggests, changing the cost standard from TELRIC to reproduction costs would reduce either the incentive or the ability of these renegade regulators to "fudge" costs downward.

Qwest offers the statements of Raymond Gifford, identified only as "former chairman" of the "Colorado commission," for the proposition that state commissions have been "intimidated" by the CLECs into setting UNE prices at levels that "induce entry." Qwest at 11 & n. 31; *see also id*. at 7 n. 22; *id*. at 11-12 n. 34; *id*. at 14 n. 45 (asserting that the TELRIC standard "'forecloses anything resembling a principled answer' to the UNE pricing inquiry"); *id*. at 43 n. 110 (deriding UNE price setting as "unprincipled"); *id*. at 56 n. 136 (describing the efforts of state commissions as "a classic 'race to the bottom'"); *id*. at 63 n. 146 Qwest neglects to

mention that Mr. Gifford is currently the president of the "Progress & Freedom Foundation," a Bell-funded entity.[9]

More important, the Commission does not have to speculate on whether state commissions are carrying out their obligations under the Act. During the past four years, the Commission has had the opportunity to review UNE pricing records by almost every state commission, and has repeatedly commended state commissions for the quality of their work in setting UNE prices. *See Minnesota 271 Order* ¶ 2 ("we wish to acknowledge the effort and dedication of the Minnesota Public Utilities Commission . . . which has expended significant time and effort overseeing Qwest's implementation of the requirements of section 271"); *id.* ¶ 3 (recognizing the "outstanding work of the Minnesota Commission"); *Qwest 9-State Order* ¶ 2 ("Approval of this application, the first one granted for states in the Qwest region, would not have been possible without the extraordinary dedication and creativity displayed by the Colorado Public Utilities Commission . . . the Idaho Public Utilities Commission . . . the Iowa Utilities Board . . . the Montana Public Service Commission . . . the Nebraska Public Service Commission . . . the North Dakota Public Service Commission . . . the Public Service Commission of Utah . . . the Washington Utilities and Transportation Commission . . . and the Wyoming Public Service Commission"); *Qwest 3-State Order* ¶ 2 ("we wish to acknowledge the tremendous efforts of the New Mexico, Oregon and South Dakota Commissions, that were instrumental in Qwest's implementation of the requirements of section 271. . . . [R]egulators in these states have been able to build on the work done by their fellow commissioners in other states to address issues such as pricing, for example, in an efficient manner through individual state proceedings").

[9] *See* http://www.pff.org/about/supporters.html (identifying BellSouth, Qwest Communications, SBC Communications, Verizon Communications and the United States Telecom Association as "supporters" of the organization).

G. TELRIC Does Not Deter Efficient Investment By Incumbent Or Competitive Carriers.

Finally, the Bells attempt to revive their claim that TELRIC-based rates deter investment in local networks. BellSouth at 18; Qwest at 3-6; SBC at 7-13; Aron-Rogerson (SBC) at 11-17; Verizon at 8-19; Kahn-Tardiff (Verizon) Decl. ¶¶ 7-13, ¶¶ 29-32 (underinvestment); Shelanski (Verizon) Decl. ¶¶ 3-5, 15. This argument is no more valid than when the Supreme Court rejected it two years ago. *Verizon*, 535 U.S. at 504-07, 509-10, 516-22.

The Bells dispute that TELRIC provides them with sufficient returns to invest in new technologies, but this is simply a repackaging of their more general claim that TELRIC is not compensatory, and fails for the reasons stated above. The incumbents have adequate incentives to invest in new facilities where the rates for unbundled access includes a forward-looking, risk adjusted cost of capital and depreciation lives. Willig Decl. ¶¶ 42-43; Willig Reply Decl. ¶ 82. And as the Supreme Court has recognized, TELRIC expressly provides such returns. *See Verizon*, 535 U.S. 519 ("TELRIC itself prescribes no fixed percentage rate as risk-adjusted capital costs and recognizes no particular useful life as a basis for calculating depreciation costs" and, therefore, may be "adjusted upward if the incumbents demonstrate the need"); *id.* at 521 ("TELRIC rates leave plenty of room for differences in the appropriate depreciation rates and risk-adjusted capital costs depending on the nature and technology of the specific element to be priced."). Further, the competition facilitated by TELRIC pricing for UNEs gives incumbents added incentives to improve their networks to avoid losing customers to new entrants. *Verizon*, 535 U.S. 517 n.33 (it is "commonsense . . . that so long as TELRIC brings about some competition, the incumbents will continue to have incentives to invest and improve their services to hold on to their existing customer base").

Equally meretricious is the Bells' claim that TELRIC-pricing is deterring investment by CLECs. First, the implicit premise of this theory—that CLECs are using UNEs instead of

building their own facilities because UNEs are too "cheap"—is demonstrably false. Even when UNEs are priced strictly at TELRIC, CLECs have strong incentive to invest in alternative facilities where feasible, even if doing so costs the CLECs a bit more than leasing the facility from the ILEC. CLECs are understandably reluctant to depend on a supplier of critical inputs that has little incentive to supply those inputs in a commercially reasonable manner. Willig Reply Decl. ¶ 87. This is revealed most starkly by SBC's financial reports, which show a decline in wholesale UNE sales as "positive" for investors.[10]

In all events, whatever merit the sink-or-swim theory of UNE pricing might have possessed was extinguished by the *Triennial Review Order*. There, the Commission eliminated unbundled access to any UNEs that it believed were capable of "multiple competitive supply." *Triennial Review Order* ¶¶ 87 n. 283, 329 n. 974. Indeed, the Commission eliminated access to UNEs even where there were no demonstrated alternatives but where, based on a "business case," bypass could be deemed potentially feasible. *See* 47 C.F.R. § 51.319(a)(5)(ii) (potential deployment of enterprise loops); *id.* § 51.319(d)(5)(iii)(B) (potential deployment of switching); *id.* § 51.319(e)(2)(B)(ii) (potential deployment of dedicated transport).

The Commission need not guess as to these points. Empirical evidence confirms that lower UNE prices translate into increased facilities-based investment in local networks. Employing standard econometric procedures, several studies have directly measured the extent to which incumbent network investment has been impacted by local competition. Willig Decl. ¶¶ 44-45; Willig Reply Decl. ¶ 88. Overall, this evidence shows (within traditional statistical significance intervals) that a reduction in UNE rates causes a significant increase in incumbent

[10] *See* http://www.sbc.com/Investor/Financial/Earning_Info/docs/4Q_03_IB_FINAL.pdf (p. 7); http://www.sbc.com/Investor/Financial/Earning_Info/docs/4Q_03_slide_bw.pdf (p. 11).

LEC investment. *Id*. Overall, the Phoenix Center estimates that there has been a $10 billion consumer welfare gain from unbundling at TELRIC-based rates.[11]

The Bells offer no response to this econometric analysis, but instead proffer a competing analysis by Hazlett, Havenner and Bazelon. *See* Hazlett *et al.* (Verizon) Decl. ¶¶ 11-19. As Professor Willig explains, this analysis is riddled with fundamental economic and statistical errors. For example, Hazlett, Havenner and Bazelon claim to show that UNE-P has dried up investment opportunities because of an increase in the payment of dividends by telephone carriers. According to Hazlett *et. al.*, telephone companies, both incumbents and new entrants, must lack for investment opportunities because if such opportunities existed, then the companies could not afford to pay dividends. *Id.* ¶ 14.

This reasoning is astonishing. It assumes that telephone companies have *no* access to capital markets. According to this view, investment financing from external sources is so expensive that only internal funds may profitably be used to finance even attractive projects. The opposite, of course, is true. Willig Reply Decl. ¶ 98.

Hazlett, Havenner and Bazelon also make several basic statistical errors. *Id.* ¶¶ 99-100. Most egregiously, they have based their conclusion on a model that assumes that neither the cost of UNEs, as embodied in UNE-P prices, nor the cost of facilities-based investment, as embodied in TELRIC prices, plays any role in determining the level of facilities-based competitive carrier investment. This is a fundamental economic error, and one that Dr. Willig's own econometric results empirically refute. It is elementary econometrics that this kind of omission imparts a bias to the estimates of the remaining coefficients. On this basis alone the results obtained by Hazlett *et al.* are facially unreliable.

[11] *See* Phoenix Center Policy Bulletin No. 8 (Jan. 27, 2004) (available at http://www.phoenix-center.org/PolicyBulletin/PCPB8Final.pdf).

Finally, the suggestion of Verizon witnesses Kahn and Tardiff that wireless and other intermodal competition has made Commission regulation of UNE prices unnecessary is absurd. The Commission expressly rejected those claims in the *Triennial Review Order* (¶¶ 52, 222, 229 230) finding that these alternatives were not remotely sufficient to constrain the ILECs' market power. Moreover, if the Bells seriously feared intermodal competition, they would be trying to *encourage* CLECs to use the ILEC networks and thus retain customers and revenues on the network. The persistent efforts of the Bells to choke off use of UNEs by CLECs is eloquent evidence that the Bells do not in fact regard intermodal competition as a serious threat. Selwyn Reply Decl. ¶¶ 53-56.

III. THE COMMISSION SHOULD CLARIFY ITS TELRIC RULES TO ENSURE THAT UNE RATES DO NOT SUBSIDIZE NETWORK CAPABILITIES THAT THE TRIENNIAL REVIEW ORDER DENIES TO UNE PURCHASERS.

As AT&T explained in its initial comments (at 53-55), it is a bedrock principle of ratemaking that charges for regulated services should include only those costs properly attributable to the provision of the regulated services. And, as AT&T explained (*id.*), in the wake of the *Triennial Review Order*, the Commission needs to clarify its TELRIC rules to ensure consistency with that principle. There, the Commission eliminated unbundled access to certain of the "broadband" capabilities of hybrid fiber-copper loops (and also limited the bandwidth available to purchasers of high-capacity loop and transport UNEs). *Triennial Review Order* ¶¶ 273, 288-89, 315, 324, 388-89. In the wake of these changes, the Commission must take steps to ensure that competitive LECs bear only the costs properly attributable to the capabilities of the facilities that they may actually use, and not costs that are attributable to capabilities to which competitive LECs are denied access.

Notably, BellSouth endorses the need for such changes. Under the Commission's new unbundling rules, competitive carriers have access to only a fraction of the full capabilities of hybrid and all-fiber loops. NERA (BellSouth) Decl. ¶ 40. Thus, BellSouth acknowledges that competitive carriers should only be required to pay for the fraction of the costs of those loops that are "attributable" to the narrowband services that competitive carriers can offer over such loops. *Id.*

Only Verizon argues to the contrary. Without any elaboration, Verizon breezily asserts (at 48) that competitive carriers should have to pay the full costs of loop capabilities that they are denied because "the incumbent must bear those costs in order to provide that loop." That is false. The economic cost incurred by the incumbent is the cost of only those facilities that are needed to provide the services that competitive carriers are actually providing over the UNEs

that they are using. Thus, to the extent that fiber is being deployed in the local networks to support broadband services, the competitive carrier does not cause those costs when it is purchasing the UNE. And that is why Verizon's own economists have rejected the notion that narrowband users of the networks should bear any of the costs of investments used to provide broadband services. Alfred Kahn, *How to Treat the Costs of Shared Voice and Video Networks in a Post-Regulatory Age*, Policy Analysis, No. 264, at 6 (Nov. 27, 1996).

Moreover, it is questionable whether the Bells incur *any* significant incremental capital costs to provide UNEs. By Verizon's own admission, it provides UNEs only on a space-available basis. When filling a CLECs request for UNEs would require substantial investment, Verizon refuses to provision the UNE. In Verizon's own words, "the Act does not require [it] to construct network elements . . . for the sole purpose of unbundling those elements for AT&T or other carriers."[12] "Where the facility or equipment does not exist in Verizon's network, it is not used in the provision of a telecommunications service and its not available for unbundling."[13] Likewise, the Commission has found that, when "spare facilities and/or capacity on those facilities is unavailable, Verizon will not provide new facilities solely to complete a competitor's order for high capacity loops." *Pennsylvania 271 Order* ¶ 91. Nothing in the record of this proceeding indicates that Verizon is more accommodating in providing any other network elements to CLECs, or that the other Bells are more accommodating than Verizon.

Not only is Verizon's position poor economic policy, it is unlawful. Allowing incumbents to charge UNE rates that recovered costs of other facilities not used to provide those UNEs – or forcing UNE purchasers to pay all of the joint and common costs of facilities used to provide both capabilities that CLECs can access and those that they cannot – would force

[12] Ex Parte Letter from Ann Berkowitz, Verizon, to Marlene Dortch, FCC, WC Docket No. 02-214, at 1-2 (Oct. 16, 2002).

[13] *Id.*

competitive carriers (as well as their ultimate retail customers) to cross-subsidize other incumbent services in express violation of section 254(k), would be discriminatory in violation of sections 251(c)(3) and 251(d)(1)(A)(ii), and would constitute an arbitrary departure from the Commission precedent holding that "[c]osts must be attributed on a cost-causative basis." *Local Competition Order* ¶ 691.

IV. APPLYING THE TELRIC RULES—SPECIFIC ASSUMPTIONS AND INPUTS

A. Network Assumptions

1. Network Routing And Construction

An efficient carrier would choose the least-cost routes and construction techniques to build its network. It plainly would not merely reproduce the incumbent's existing distribution routes, feeder routes, and/or remote terminal locations without regard to less costly network designs. Klick Reply Decl. ¶ 55; Riolo Decl. ¶¶ 134-141. The ILECs' existing network configurations cannot be presumed to be efficient, particularly in view of their piecemeal deployment and their decades-old engineering designs. *See* AT&T at 56; Klick Reply Decl. ¶¶ 35, 55. As demonstrated above, basing UNE rates on the ILECs' existing network routes and configurations would amount to adopting the discredited "reproduction" cost standard and would inflate UNE rates so substantially that competitive entry would effectively be blocked. *See* AT&T at 56.

Moreover, the ILECs' records are insufficiently accurate or complete even to permit a determination of the forward-looking costs of even their "actual" networks. *Id.* at 56-57; Klick Reply Decl. ¶¶ 43-44. Verizon, for example, while urging a "real-world" approach, tacitly admits that it is incapable of providing information on its "actual" routings and topographies. Verizon at 40; *see also* Klick Reply Decl. ¶ 43. Similarly, while SBC asserts (at 57(that using the ILECs' "real-world" network routing choices would eliminate "speculative modeling assumptions" and "black box speculation," SBC's own cost studies have used the very type of assumptions it criticizes because actual SBC routing data are unavailable. *See* Klick Decl. ¶ 56 (SBC's cost studies assume that all cables are on-half the length of the longest cable in a wire center); *see also* Klick Reply Decl. ¶¶ 43, 51. And that is why the California commission has concluded, "no cost model," including those sponsored by SBC, "appears to be able to replicate all of the outside plant facilities of the incumbent carrier" and all "prior models, and the current

models before the CPUC use assumptions regarding placement of facilities." California at 10-11.

Even if complete and reliable data regarding the ILECs' actual network routing and construction practices were available (and they are not), they would be unlikely to enhance a State commission's ability to determine proper UNE rates. *See* Klick Decl. ¶ 55. As Qwest's own witness states, "[m]odels that attempt to account for each and every nuance of the real world are generally intractable and therefore of little value." Weisman (Qwest) Decl. ¶ 32. At a minimum, to the extent that information regarding the ILECs' "actual" network exists, greater regulatory reliance on such information would put both CLECs and the State commissions at a substantial disadvantage, given the difficulty of verifying whether the information is accurate and complete. *See* Klick Decl. ¶ 51; Klick Reply Decl. ¶ 54; Willig Reply Decl. ¶¶ 55-56; *see also Verizon*, 535 U.S. at 512 (describing ILECs' opportunity to manipulate their data to their advantage).

Cable Routing Algorithm. The Bells' allegation that the CLECs' cost models "ignore" or give "little regard" to natural obstacles, homes, rivers, rights-of-way restrictions and other impediments is pure sophistry. *See* SBC at 57-58; Qwest at 30-31. Precisely the reverse is true. *See generally* AT&T at 57-58; Bryant Essay; Klick Decl. ¶¶ 45-74. CLEC-sponsored cost models go to great lengths to incorporate as much of this information that is reasonably available. Thus, they display an impressive degree of granular detail, and account for the cost effects of varied terrain and obstacles (both natural and man-made), when determining the least-cost, most efficient cable routes. AT&T at 57-58. These models account for local and State variations in terrain, population density, labor costs, and material costs. *Id.*; Klick Reply Decl. ¶ 52.

Indeed, despite their hyperbole, the only specific aspect of the CLECs' cost models that the Bells cite as objectionable is the models' use of a "right-angle routing" algorithm to determine the amount of cable required in a forward-looking network. *See* Qwest at 30-31; SBC at 57-58. Right-angle routing, however, is necessitated by the impracticality and unmanageable cost of accounting for every conceivable detail and feature in the ILECs' network. Because the right-angle routing assumption builds in the extra cable required to route around "real world" obstacles, this assumption is a reliable and conservative approach of estimating cable lengths. *See* AT&T at 58.

The crux of Qwest's attack on right-angle algorithms is their supposed failure to reflect the actual engineering process, or to design distribution along actual roads to serve actual customers. *See* Qwest at 31-32. Qwest misses the critical distinction, for UNE costing purposes, between engineering design and cost attribution. *See, e.g.,* Riolo Decl. ¶¶ 15, 34, 52. A cost model is not designed to reflect engineering principles or to produce maps of precise cable routes, but only to generate reasonable estimates of the total amount of telephone cable that a carrier would be required to deploy in a forward-looking network. As long as a model produces a reasonable estimate of the total amount of the cable needed, and the cost of that cable, the model is TELRIC–compliant. The right-angle algorithm plainly meets this requirement.

Both this Commission and several State commissions have approved the use of right-angle routing as a reliable means of determining cable lengths. Indeed, this Commission uses a right-angle routing algorithm in its TELRIC cost model. *See Inputs Order* ¶ 69. The reason for this regulatory approval is clear: the right-angle routing algorithm is not only reliable, but conservative. If anything, right-angle routing tends to *overstate* the amount of cable (and thus the amount of costs) that is actually necessary to connect customers in the "real world," where cable is run in more direct routes (rather than in the "horizontal, then vertical" path of right-angle

routing).[14] That fact is confirmed by real-world experience. For example, in a state UNE rate proceeding CLECs' HAI cost model using the right-angle routing algorithm produced 28 percent *more* distribution cable and 436 percent *more* feeder cable than was produced by the BellSouth's cost model (which maintained highly detailed customer location data and required cable paths to run along roads and other know rights-of-way).[15]

For these reasons, the Commission should reaffirm the current requirement that network routing and construction reflect the least-cost routes and construction techniques. In addition, because the exact routes, construction methods and costs of deploying a network may vary substantially from state to state, the Commission should rule that individual State commissions are in the best position to determine whether the cable placement assumptions of particular TELRIC cost models appropriately reflect the terrain and topography of a particular state. AT&T at 59.

SBC provides no evidence to support its suggestion that a hypothetical competitive firm serving the entire market would incur substantially greater costs than ILECs in obtaining rights-of-way, and there is no basis for assuming the validity of that suggestion. *See* SBC at 57. As explained above, an appropriate application of the contestability standard seeks to determine the prices that an incumbent carrier would charge on the (counterfactual) assumption that there were no barriers to entry. Willig Reply Decl. ¶ 10. Under this framework, the appropriate costs are

[14] The AT&T letter cited by SBC refutes (at 57-58 & n.90), rather than supports, its position. Ex Parte Letter from Joan Marsh (AT&T) to Marlene Dortch, WC Docket No. 03-173, Att. at 5 (filed October 8, 2003) (stating that as a result of their use of right-angle routing, real geocodes, and census block group-specific terrain data, current TELRIC models "have been conservatively generous in determining plant distances and plant placement costs").

[15] *See* Direct Testimony of Douglas Denny submitted in Arizona Corporation Commission Docket No. T-00000A-00-0194, *supra*, at 27-28.

the costs that the first-mover carrier would incur in efficiently acquiring the necessary rights-of-way. *Id.* ¶¶ 79-81.

2. Line Counts

As AT&T has previously shown, it is critical that all high-capacity loops be included in the calculation of rates for loops that are available as UNEs, so that the forward-looking costs can be accurately calculated, and the costs of shared facilities can be properly assigned among loops that are available to CLECs and those that are not. Such calculation, however, are possible only if the Commission requires ILECs to provide complete line counts, by loop type, by technology, and by central office. *See* AT&T at 59-61; Riolo Decl. ¶¶ 111-33; Klick Decl. ¶ 80.

The Bells fail to address this issue in their comments. In their discussion of discovery issues, Verizon and Qwest suggest a willingness to provide data that arguably encompasses line counts in UNE proceedings under certain conditions. *See* Verizon at 106-107; Qwest at 62. The Commission, however, should expressly require the production of granular line count data in every UNE rate proceeding. The ILECs' exclusive possession of such data, their importance in ensuring that UNE rates fully reflect the economies of scale and scope achieved by the sharing of facilities between two-wire loops and high-capacity loops, and the refusal of some Bells to provide such data in some UNE rate proceedings warrant the issuance of a Commission rule that the ILECs must produce such data. AT&T at 61; Riolo Decl. ¶ 130 & Atts. C-D.

B. Technology Assumptions.

The Bells argue that a forward-looking cost model should not assume the most efficient digital loop carrier ("DLC") technology for fiber-fed loops—*i.e.,* Integrated Digital Loop Carrier ("IDLC") using GR-303 technology. *See* Aron-Rogerson (SBC) Decl. at 20, 26-27; Shelanski (Verizon) Decl. ¶¶ 30, 48; Verizon at 41-42. The *Virginia Arbitration Order*, however, correctly

rejected the Bells' contention that their "real-world DLC mix" should be used, *see Virginia Arbitration Order* ¶¶ 310-322, and the Commission should do so here.

The Bells do not dispute that an efficient carrier constructing an efficient forward-looking network would only deploy switches that use GR-303 technology. *Accord*, Klick Reply Decl. ¶ 66 (describing the efficiencies achieved through use of GR-303 switch interfaces). Indeed, the Bells' own witnesses in this proceeding acknowledge that GR-303 would be the most cost-effective technology in a forward-looking network. Aron-Rogerson (SBC) Decl. at 26-27; Shelanski (Verizon) Decl. ¶¶ 30, 48.

Thus, the Bells only argument against assuming IDLC/GR-303 for TELRIC involves the supposed technical limitations of GR-303. First, the Bells assert that it cannot be used to unbundle stand-alone loops. *See* Verizon at 41-42; Aron-Rogerson (SBC) Decl. at 26-27. As the Bureau found, however, in the *Virginia Arbitration Order,* the Bell's arguments regarding the purported technical unfeasibility of unbundling IDLC with GR-303 technology is contradicted by: (1) the admission of Verizon's own witness in that proceeding "that Verizon has had the technical ability to provide unbundled next generation digital loop carrier ("NGDLC") loops for *four to five years*, but chose not to implement a standard offering because competitive carriers had not sufficiently pursued such an offering," and (2) the fact that "BellSouth, in its section 271 applications, repeatedly informed the Commission that it unbundles loops that traverse NGDLC and GR-303/IDLC systems, thereby demonstrating that such unbundling is technically feasible and currently available." *Virginia Arbitration Order* ¶ 315 & n.819 (emphasis in original).

The technical feasibility of unbundling IDLC-based loops using GR-303 is further confirmed by Telcordia's Notes on the Networks. Although Verizon insists that Telcordia has not resolved the technical issues and challenges of unbundling loops using GR-303, Verizon at 42, Telcordia has concluded otherwise. Telcordia, in updating its SCIS model, decided that TR-

08 was not a forward-looking technology for use with Lucent's SM2000 switch module, and instead modeled *only* GR-303 technology with the Lucent switch. Thus, when Verizon chose the Lucent SM2000 switch module as its forward-looking technology to model switching costs in the *Virginia Arbitration* proceeding, the SCIS model it sponsored did not recognize TR-08.[16]

Verizon's claim that IDLC/GR-303 cannot be used to provision non-switched services is equally wrong. *See* Verizon at 41. Verizon's own 2000 planning guidelines state explicitly that growth in its Verizon West network will be based on GR-303 NGDLC. *Virginia Arbitration Order* ¶ 317 & n.821. Equally unavailing is Verizon's suggestion that unresolved network security and OSS issues regarding GR-303/IDLC unbundling preclude the deployment of IDLC/GR-303 in the forward-looking network. Verizon at 42. As the *Virginia Arbitration Order* found, Verizon's assertions regarding network security issues are a red herring, because Verizon must have resolved any such security concerns before it deployed GR-303 in its Verizon West region, where "GR-303 systems are used for growth." *Virginia Arbitration Order* ¶ 320.

Verizon suggests that the difficulties in developing OSS for unbundling are somehow insurmountable, Verizon at 42, but "[d]eveloping and implementing such systems is within Verizon's control," as it was when Verizon was first required to provide an unbundled loop but the OSS to do so did not exist.[17] Verizon was able to resolve OSS issues for its back-end systems once it decided to deploy GR-303 outside the context of unbundled loops.[18] The salient inquiry, however, is not whether the ILECs have already developed the OSS to support

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[16] *See* Telcordia Notes on the Networks (October 2000), Section 12, Figure 12-35 (available at http://telecom-info.telcordia.com/site-cgi/ide/index.html); Supplemental Surrebuttal Testimony of Catherine E. Pitts in *Virginia Arbitration* proceeding, at 6-7; *Virginia Arbitration* proceeding, Tr. at 2850 (Matt).

[17] *Virginia Arbitration Order* ¶ 321. *See also* Rebuttal Testimony of Michael L. Baranowski, Catherine E. Pitts, Joseph P. Riolo, and Steven E. Turner in *Virginia Arbitration* proceeding, at 29-30.

[18] *See Virginia Arbitration* proceeding, Tr. at 4587 (Gansert).

IDLC/GR-303 unbundling, but rather "whether the technology is 'currently available.'" *Virginia Arbitration Order* ¶ 321. A process or function may be "technically feasible" within the meaning of the *Local Competition Order* even if its implementation "may require *some modifications to existing systems.*" *See id.* (emphasis added); *Local Competition Order* ¶¶ 524-525 (emphasis added).

The reality is that the ILECs have elected to deploy relatively little IDLC/GR-303 in their existing networks simply because the ILECs' investment decisions are influenced by the sunk nature of their embedded switch investment. *See* Willig Reply Decl. ¶¶ 43-45. The Bells themselves admit this fact. *See* Shelanski (Verizon) Decl. ¶ 30; Aron-Rogerson (SBC) Decl. at 20. Until this investment reaches the end of its useful life, the ILECs have no incentive to make the necessary modifications and take any other steps necessary to achieve GR-303 unbundling—even if the resolution of such issues would be readily achievable and in the overall interest of competitors and ratepayers generally. In fact, as long as the ILECs can argue for higher UNE prices on the ground that GR-303 unbundling is not yet available, they have every incentive to delay the development of OSS to support such unbundling as long as possible.

C. Loop Cost Inputs

1. Fill Factors.

Beneath the Bells' rhetorical flourishes, the true nature of the Bells' fill factor proposals is clear. The Bells entreat the Commission to require State commissions to adopt incumbents' embedded fill factors in determining loop costs—fill factors that do not and cannot represent the optimal utilization rates of an efficient carrier in a forward-looking network. *See* Riolo Reply Decl. ¶¶ 13-47.

As AT&T has explained, the ILECs' embedded fill factors cannot possibly approximate the fill utilization rates that an efficient carrier would achieve in the long-run because, *inter alia*:

(1) rate of return regulation gave incumbents strong incentives to build excessive amounts of spare capacity in their networks; (2) the incumbents' networks are a patchwork of numerous feeder routes and plant of many vintages, much of it built to meet future growth that never materialized; (3) the incumbents' networks include distribution areas in central business districts that are overbuilt as a result of the incumbents' unsuccessful efforts to market Centrex-type services to business customers; (4) the incumbents' existing networks were constructed with engineering techniques and technologies that are now obsolete; and (5) the incumbents maintain less efficient DLC equipment in their networks, instead of GR-303 compatible DLC equipment that allows higher utilization rates. Riolo Decl. ¶¶ 36-52; *see also* Willig Decl. ¶¶ 82-89. Nothing in the Bells' comments alters these conclusions.

Churn, Maintenance and Breakage. The Bells' contention that their embedded fill factors are efficient because they are the product of "real-world constraints" such as churn, maintenance, and breakage is baseless. *See* AT&T at 62-64; Riolo Reply Decl. ¶¶ 17-20. Relatively modest amounts of spare capacity are required to accommodate customer churn because: (1) most churn essentially is self-canceling; (2) even when a location is vacated, the line is still active for a limited period and is treated as cut-through pairs in the fill ratio; and (3) where churn theoretically could result in short-term demand fluctuations (*i.e.* ordering additional residential lines in existing locations), demand is decreasing as customers increasingly rely on a single telephone line for both telephone and broadband service. AT&T at 62; Riolo Reply Decl. ¶ 19.

In a forward-looking network, the spare capacity required for maintenance of defective equipment is also modest. As AT&T has shown, the embedded networks of the Bells may contain nontrivial amounts of defective pairs. Riolo Decl. ¶ 26. However, equipment currently produced by manufacturers has failure rates that are close to zero, and an efficient new carrier

would not construct plant expecting the same high levels of defective plant as may exist in the Bells' embedded networks. Riolo Reply Decl. ¶ 20. Furthermore, a contestable market simply would not permit an incumbent to recover the costs of any higher equipment failure rates from ratepayers. AT&T at 63. Accordingly, UNE rates should not be calculated based upon such inefficiencies. *Id.*

Breakage—the manufacturing constraints that limit cable to discrete sizes—is accommodated in TELRIC models by first rounding up the required number of wire pairs or fiber strands to the next available discrete size. Thus, modern cost models appropriately assume the purchase of cable sizes that have ample capacity and are actually available for purchase. Riolo Decl. ¶ 30. Moreover, the spare capacity attributable to breakage is often sufficient to accommodate the relatively modest amounts of spare capacity that are required for churn and maintenance.

Growth and Cost Attribution. The Bells' contentions that the large amounts of spare capacity reflected in their actual fill rates are required to accommodate future growth—and that current ratepayers should pay for all such spare capacity—are demonstrably unsound. The Bells have offered no justifiable reason why current ratepayers should be required to subsidize the *future* ratepayers on whose behalf the future growth spare capacity is built. In fact, attributing to current ratepayers the costs of growth capacity, whether efficient or not, would violate principles of cost causation and intergenerational equity. AT&T at 64-65; *cf.* Willig Decl. ¶¶ 88-89. As this Commission has found, "if we were to calculate the costs of a network that would serve all potential customers, it would not be consistent to calculate the cost per line by using current demand. In other words, it would not be consistent to estimate the cost per line by dividing the total cost of serving all potential customers by the number of lines currently served" today. *Universal Service Order* ¶ 58. Even Verizon witness Alfred Kahn has agreed:

> We have already posed the question of the proper rate [of depreciation] when a plant is built far in advance of total need – perhaps because there are great economies of scale. To charge depreciation in equal annual installments would be to impose a disproportionately heavy burden on customers in earlier years, when much of the capacity lies idle. Considerations of fairness – the idle capacity is really for the benefit of future, not present customers – and economic efficiency present a case for something similar to SRMC pricing, which would have the effect of concentrating the capital charges in later years.

I Alfred Kahn, THE ECONOMICS OF REGULATION 121 (1970).

Verizon's rejoinder that that no portion of spare capacity costs should be recoverable from "future users" rather than current ratepayers because "on average" utilization in the network "remains stable over the long run," Verizon at 46, is simply a reprise of the argument that the *Virginia Arbitration Order* properly rejected.

Verizon confuses the average utilization of the network *in the aggregate* with the utilization of *individual* loops, serving areas or other subcomponents of the network – the level of aggregation at which Verizon makes plant-sizing decisions and offers discrete units of capacity for sale to CLECs and other ratepayers. Riolo Reply Decl. ¶ 25. At that disaggregated level, Verizon clearly sizes its plant with the expectation that demand will tend to increase over time, and that capacity utilization *for a given set of facilities* will tend to trend upward until the capacity is augmented. When a previously idle loop is eventually brought into revenue-generating service by increased demand, the future new customer receives no credit for whatever contribution that prior ratepayers may have made to the cost of that loop when it was merely idle capacity. Hence, there is no conceivable argument for charging today's customers for spare capacity dedicated to future revenue-generating services. "Just as the Commission found it inappropriate to include in universal service support the costs of building outside plant to meet uncertain ten- or twenty-year demand projections, it is inappropriate for [the CLECs] to bear the cost today of building plant for uncertain ultimate demand." *Virginia Arbitration Order* ¶ 254.

Further, quantification of the specific carrying costs and future revenues from growth capacity is far too "speculative." *Notice* ¶ 73.

Finally, even if it were assumed (counterfactually) that the costs of spare capacity for future growth should be borne by current ratepayers, the amount of growth capacity would need to be discounted substantially, for the magnitude of growth capacity for lines available as UNEs is likely to approach zero or the negative for the foreseeable future. Riolo Decl. ¶ 23; Riolo Reply Decl. ¶ 27.

Engineering Guidelines. The Bells also cannot properly seek refuge in their engineering guidelines as a basis for justifying the excessive levels of spare capacity in their networks. The Bells contend that the engineering guidelines impose inflexible requirements for capacity to which Bell engineers slavishly adhere. In fact, the Bell engineering guidelines leave engineers considerable discretion in determining optimal plant capacity, and sound industry engineering practices encourage the maximization of outside plant to the greatest extent possible. Riolo Decl. ¶ 57; Riolo Reply Decl. ¶ 29. Finally, as explained above, even to the extent that these guidelines would have the incumbent reserve significant spare capacity for growth, such excess capacity should not be charged in the UNE rates paid by current users. Willig Decl. ¶¶ 88-89.

Stability of Fill Levels. The Bells' argument that the stability of their embedded fill levels demonstrates the efficiency of their networks borders on the frivolous. *See, e.g.,* Verizon at 44-45; BellSouth at 27. Even assuming *arguendo* that the Bells' fill levels have remained "stable," that "stability" simply demonstrates the *inefficiencies* of their current fills – and the ineffectiveness of price caps and other factors that the Bells contend cause them to be efficient. If anything, given the low levels of fill in the Bells' current networks, the fact that fill levels have remained "stable" confirms that the Bells are installing far too much capacity in their networks. Riolo Reply Decl. ¶ 31.

Verizon's comments illustrate this precise point most starkly. Verizon contends that the spare capacity in its network is both "stable" and efficient because "as existing spare units of capacity are placed into service in various parts of the network, new capacity is being added to other parts of the network constantly." Verizon at 46. Implicit in Verizon's argument is the notion that an efficient carrier automatically adds capacity to its network whenever it places previously unused facilities into service. This assumption is incorrect. An efficient carrier would not mindlessly augment its network each time it places previously unused capacity into service, as Verizon suggests, but rather would seek to allow utilization to increase to the maximum feasible extent to avoid the costs of needless idle capacity. Thus, Verizon's admission that its spare capacity remains "stable" because it augments the network whenever unused capacity is placed into service merely confirms that Verizon's utilization rates are demonstrably inefficient. *See* Verizon at 46; Riolo Reply Decl. ¶ 32.

Price Caps, Competition, and Service Quality. Equally flawed are the Bells' arguments that price caps, facilities-based competition, and service quality standards provide strong incentives to maintain optimally efficient fills and minimize excess capacity. *See, e.g.*, Shelanski (Verizon) Decl. ¶¶ 51-52; SBC at 4-5. As discussed in Section II.B above, the notion that price cap regulation has created effective incentives for the Bells to optimize their utilization rates is absurd. Price cap regulation did not eliminate the Bells' incentive to deploy excess capacity, for price cap regulation is plagued with exceptions and loopholes; and, even if effective, would not eliminate the strategic value of maintaining underutilized sunk plant capacity. Likewise, for the reasons discussed above, the ILECs' "actual" fills cannot be presumed efficient because of existing competition. *See* SBC at 68-69; Verizon at 19-24, 45. And even if, as the Bells suggest, fill levels were likely to *decrease* in the future from intermodal competition, Verizon at 45, considerations of efficiency would dictate that the Bells decrease

their costs per line by *increasing* their current fills—rather than keeping them stable—and reducing the current amount of spare capacity in their networks. *See* Riolo Reply Decl. ¶ 39; Klick Reply Decl. ¶ 7.

The Bells' arguments that service quality standards give them "strong incentives to design and operate their networks with efficient levels of spare capacity" (SBC at 5), and that service quality would deteriorate if they operated at rates higher than their embedded fill levels are equally misguided. SBC at 66; Verizon at 44 n.84. First, service quality requirements and performance metrics specify no minimum, or maximum, levels of spare capacity that the ILECs must maintain. Riolo Reply Decl. ¶ 41. Instead, they establish parity or benchmark standards for other aspects of performance that the ILECs must meet. Thus, a carrier with plainly excessive spare capacity could satisfy the Indiana standards cited by SBC (completion of 90 percent of installation orders within 5 days and generation of fewer than 10 trouble reports annually per 100 lines). *See* SBC at 68.

Second, the Bells have provided no empirical data to support their bald assertion that the operation of a network with fill levels higher than their embedded fill rates would result in a loss of efficiency and degradation of service. *See, e.g.*, Verizon at 44 n.84; SBC at 66, 68. In the absence of such analysis, the Bells' arguments are nothing more than empty rhetoric. And, as AT&T has shown, even at relatively high fill levels, a carrier has sufficient spare capacity to satisfy current demand. Riolo Reply Decl. ¶ 42.

COLR Obligations. Contradicting their claims that incumbent networks are the models of efficiency, the Bells contend that they are required to maintain lower utilization rates than they would otherwise maintain because of their COLR obligations. Verizon at 45; SBC at 67-68; BellSouth at 8; NERA (BellSouth) Decl. ¶¶ 22-25. However, the Bells' reliance on their status as "carriers of last resort" is nothing more than a variant of their discredited claim that fill factors

should be based on ultimate demand. Riolo Decl. ¶ 67. Furthermore, as noted above, the Bells' submissions are bereft of any evidence to support the notion that State commissions are somehow requiring the Bells to maintain the bloated levels of spare capacity in their networks. And, even assuming *arguendo* that the Bells' assertions are true, these costs should be recovered through the universal service contribution fund, rather than wholesale UNE rates. Riolo Reply Decl. ¶ 44.

Transparency. Perhaps recognizing the bankruptcy of their justifications for their current low fills, the Bells assert that the use of actual fills has the added virtue of promoting "predictability" and greater accuracy in cost calculations. SBC at 69. Nothing could be further from the truth. The mechanical application of the incumbents' pathetically low embedded fills would simply result in overly inflated UNE rates which reflect the inherent inefficiencies that persist in the Bells' networks. Nor is it true that the use of reported embedded fills will spawn greater accuracy in cost calculations than the Commission's TELRIC rules. The inherent unreliability of the Bells' distribution plant records, coupled with the flawed methodology they use when measuring fills in their networks, demonstrates the absurdity of any suggestion that the Bells' reported embedded fill levels accurately depict their actual utilization rates. Riolo Decl. ¶¶ 50-51; Klick Decl. ¶¶ 62-67; Riolo Reply Decl. ¶ 46.

Worse yet, the use of the ILECs' reported embedded fill factors would render UNE cost calculations less verifiable. Because the ILECs are the only entities that possess data on their embedded utilization rates, CLECs and regulators would be placed at a considerable disadvantage in verifying the ILECs' data. And because of the asymmetry of available information, the incumbents have every incentive to manipulate the data to suit their purposes. *See* AT&T at 29-30; Riolo Reply Decl. ¶ 47. Thus, reliance on the incumbents' low embedded fill factors would not only generate costs well in excess of those required to serve current

demand efficiently, but it would also place CLECs (as well as regulators) at a significant informational disadvantage without improving the accuracy of TELRIC calculations. *See* AT&T at 39.

2. Structure Sharing.

Each of the Bells asserts that loop prices should reflect the Bells' "actual," embedded structure sharing percentages. *See* BellSouth at 26; SBC at 62; Verizon at 48; Qwest at 34 (arguing that embedded percentages are the best evidence of the level of sharing that is achievable in a forward-looking network). The Bells do not seriously dispute that they have substantial opportunities for sharing of aerial structure, but rather contend that opportunities to share buried and underground structure in the forward-looking network would be virtually nonexistent. *See* BellSouth at 26; Verizon at 47. The Bells' arguments are demonstrably unsound.

The incumbents' "actual" (*i.e.* embedded) sharing percentages are not a suitable proxy for efficient forward-looking sharing percentages. There were fewer sharing opportunities in the past; and incumbents and other regulated monopolists had little incentive to take advantage of such opportunities since such sharing would have reduced the underlying rate base on which their rates of return were computed and facilitated competitive entry by lowering CLEC operating costs. Riolo Decl. ¶¶ 81-82; *cf.* Selwyn Decl. ¶¶ 18-20; Willig Decl. ¶ 95. Thus, the incumbents' actual embedded sharing percentages substantially understate the degree of sharing that will exist in a forward-looking network. Moreover, use of embedded sharing percentages would send improper cost signals to the incumbents, and could spawn inefficient investment decisions going forward. Willig Decl. ¶ 95. If incumbents are permitted to recover costs based on their low embedded structure sharing percentages, they will have even less incentive to take advantage of sharing opportunities in the future. *Id.*

The Bells' argument that structure sharing is not feasible because existing structure has already been built is self-contradictory. *See* Riolo Reply Decl. ¶ 51. The incumbents' argument is based upon a short-run perspective. AT&T at 10. If, however, structure sharing opportunities are to be evaluated over the short-run, so too must the unshared cost of the structure. Because most investment in support structure is sunk once made, the short-run incremental cost of support structure is close to zero. The incumbents cannot have it both ways. They cannot endorse a methodology that allows them to use short-run costing assumptions where they produce higher costs, and simultaneously advocate long-run cost assumptions where *they* produce higher costs. *See* AT&T at 43; Riolo Reply Decl. ¶ 51; Klick Reply Decl. ¶ 25.

In the long run—the time horizon encompassed in TELRIC—there are today, and will be in the future, substantial opportunities for the sharing of buried and underground structure. Riolo Reply Decl. ¶ 52. In this regard, SBC's assertion that there are "complications . . . to sharing that make it limited even in new developments" is simply contrary to the facts. SBC at 62 n.94. In new residential developments, developers typically provide, free of charge, the trench and structure within which the facilities of telecommunications carriers are placed. Riolo Decl. ¶ 91.

Moreover, the Bells cannot legitimately contend that there are no opportunities for sharing even in the short and medium run. Even in existing developments, there are today, and will be in the future, substantial opportunities for the sharing of costs with utility companies, developers, municipalities, and CLECs. For example, power companies regularly rebuild or replace their facilities, CATV companies are constantly upgrading their networks, and road widenings often require companies that share space on poles to move their facilities underground. Riolo Reply Decl. ¶ 52.

The Bells' claims that buried and underground structure sharing is extremely limited because the construction plans of other utilities do not coincide precisely in terms of time and

location with those of the incumbents are equally specious. *See* Verizon at 47. The Bells' arguments are belied by: (1) the plethora of ordinances, codes, regulations which strongly encourage or require structure sharing and require utilities to provide advance notice or forecasts of proposed excavation to facilitate such coordination; and (2) the incumbents' own memberships on utility coordinating committees that are designed to facilitate the coordination that they now claim is impossible to achieve. Riolo Decl. ¶¶ 94-101; Riolo Reply Decl. ¶¶ 53-57.

Verizon cites one installation project—the Georgetown Project—as the quintessential example of the prohibitively high costs of coordination in structure sharing arrangements. Verizon claims that, "in part" due to coordination, the per-unit installation costs of the Georgetown Project exceed its costs in other projects where it is the only carrier involved. Verizon at 47. Conspicuously absent, however, from Verizon's comments is any empirical analysis quantifying the installation costs attributable to coordination as opposed to other causes, or any data showing how the nature, scope, and costs of the Georgetown Project compare to the unidentified other excavation projects to which Verizon refers. Accordingly, Verizon's unsupported, self-serving assertions should be accorded no weight for this reason alone. Riolo Reply Decl. ¶ 59.

Even assuming *arguendo* that Verizon's installation costs in the Georgetown Project have exceeded those in other projects where Verizon was the lone utility, the increased costs for the Georgetown Project could well be due to the unique working conditions, as well as the suboptimal weather, that the participants faced during the excavation process. In this regard, the Georgetown Project is an "unprecedented" renovation of the underground utility system that is being implemented by Washington Gas, the District of Columbia Water and Sewer Authority, PEPCO, Verizon and the District of Columbia Department of Transportation in Georgetown – a

densely populated district, crowded with residential and commercial structures, that attracts 17 million visitors annually. Riolo Reply Decl. ¶ 60. To minimize the impact of construction, work hours are limited to weekday nights, and no work is conducted on weekends or during holiday moratoriums. *Id.* In addition, because of the unusually high levels of precipitation and inclement weather that the Washington area experienced, work on the project was suspended for 48 days in 2003. *Id.* ¶ 61.

Remarkably, notwithstanding all of these challenges, Verizon, as well as public officials, have heralded the Georgetown Project as a resounding success. Indeed, Verizon's assertion in this proceeding that the Georgetown Project is a prime example of the insurmountable problems of coordination simply cannot be credited since: (1) Verizon serves on the Executive Management Committee which is responsible for coordinating the work on this project; and (2) the Executive Management Committee has publicly admitted that the project has run "smoothly" because of the high level of cooperation among the participants. *See* Riolo Reply Decl. ¶ 62.

Similarly, Jack Evans, a member of the District of Columbia City Council who represents Ward 2, in which Georgetown is located, has stated publicly that the "exemplary" "cooperation" among the participants in the Georgetown project has "made this unprecedented project a success."[19] And, notably, the Executive Management Committee of the Georgetown Project received the 2003 Team Excellence Award for Exemplary Partner from the American Association of State and Highway Transportation Officials ("AASHTO") because of the success of this $40 million coordinated project. Riolo Reply Decl. ¶ 62. In explaining why the

[19] *See* Councilmember Jack Evans Weekly Newsletter, Week of October 17, 2003 (congratulating the municipal agencies and "the utility companies for their dedication and commitment to making this unprecedented project a success" and noting that "[t]he level of cooperation between the six different entities has been exemplary and the Project is very deserving of such an honor in recognition of their hard work.") http://www.dccouncil.washington.dc.us/EVANS/newsletter/Week.of.10.17.03.htm.

Georgetown project was worthy of such special recognition, the AASHTO stated that the Executive Management Committee "coordinate[d] and combine[d] the individual projects [of the participants] into one massive effort," and that "the parties' cooperative effort condensed 10-15 years of proposed consecutive utility and DDOT upgrades into one project scheduled for completion within four years."[20] Thus, although Verizon attempts to portray the Georgetown Project as an archetypal example of the insurmountable difficulties associated with coordination, the public record shows precisely the opposite. Riolo Reply Decl. ¶ 63.

The Bells' remaining claims are vastly overblown. Security cannot be a major concern as the incumbents often implement such arrangements—such as the placement of fences or warning indicators around excavated areas—even when they are constructing their own facilities independently. *See* SBC at 62 n.94; Riolo Reply Decl. ¶ 65. The increased precautions necessary when construction is shared are modest. Riolo Reply Decl. ¶ 65. Nor are safety concerns an impediment to sharing. Verizon at 47 (claiming such considerations "preclude placing electrical cable in the same trench with telephone cables"). There is no such prohibition in the industry. Under longstanding industry practice, electrical cable and telephone cable may be placed in the same trench, as long as the cables are separated by a minimum distance. Riolo Reply Decl. ¶ 65.

3. Structure Mix.

True to form, the Bells contend that their embedded plant mix is a reasonable proxy for the structure mix of an efficient carrier in a forward-looking network. Qwest at 36; SBC at 5, 63; Verizon at 46. This argument is meritless.

The appropriate mix of aerial, buried, and underground plant that an efficient carrier will deploy in a forward-looking network depends upon a variety of factors, including: whether the

[20] 2003 AASHTO Excellence and Innovation Awards Program at 7, Riolo Reply Decl. Att. 1.

cable is feeder or distribution; population density; labor costs; material costs; topography; zoning rules; municipal requirements; and engineering practices. Riolo Reply Decl. ¶ 67. In a forward-looking network, an efficient new entrant would build outside plant in the least-cost, most efficient manner. *Id.* The incumbents' embedded outside plant mix is not forward-looking because it is constrained by the technologies, materials, tools, and manufacturing processes that were available at the time of plant deployment and does not reflect current best practices. Riolo Reply Decl. ¶¶ 68-69. Indeed, much of the ILECs' embedded outside plant was deployed before the development of Long Range Outside Plant Plans, which standardized and formalized the outside plant planning process and delineated the myriad factors that engineers should consider to make informed decisions about the appropriate composition of outside plant in the network. Riolo Reply Decl. ¶ 68. As a consequence, the embedded outside plant mix in the incumbents' existing networks reflects *ad hoc* decisions by various engineers that would not mirror the plant mix decision that an efficient new carrier would make today. *Id.*

The Bells' assertion that use of "actual" embedded outside plant mix data will yield greater accuracy in TELRIC calculations is pure fantasy. *See, e.g.*, SBC at 59, 62. There is absolutely no basis for assuming that the supposedly "actual" outside plant mix percentages submitted by the Bells in UNE rate proceedings accurately reflect their actual embedded outside plant mix. Riolo Reply Decl. ¶ 71. As AT&T pointed out in its opening comments, when the Bells started automating their systems in the 1990s, the only available outside plant records were unreliable and inaccurate. Klick Decl. ¶¶ 62-63. And even when the Bells have conducted outside plant surveys purportedly to obtain accurate information regarding their networks, the survey results have been plagued with errors. Riolo Reply Decl. ¶ 71.

For example, in a number of UNE rate proceedings, Verizon has relied upon a structure mix that was purportedly extrapolated from the results of an engineering survey conducted by its

outside plant engineers in the early to mid-1990s. Riolo Reply Decl. ¶ 72. The survey instructions, which directed respondents to describe the "predominant" structure used for feeder and distribution cable within each Ultimate Allocation Area ("UAA"), invited respondents to hazard nothing more than guesses regarding "the most likely type of structure that the next proposed cable will require." *Pennsylvania UNE Proceeding*, Verizon Stmt. 1.1 (Recurring Cost Panel Sur.), Attachment G at 4. If, on the basis of subjective judgment, an engineer "believe[d] that the predominant structure mix was underground, the survey recorded that 100% of the structure in the particular UAA was, in fact, underground structure." *Virginia Arbitration Proceeding*, Tr. 4144-4145. The survey default also treated *all* distribution structure as buried whenever the survey respondent failed to specify the so-called "predominant" distribution structure type. *Pennsylvania UNE Proceeding*, AT&T/WCOM Stmt. 3.1 (Riolo Sur.) at 16-17. Because the documents underlying the survey no longer exist, it is impossible to verify the full extent to which the survey results depart from Verizon's actual structure mix. Riolo Reply Decl. ¶ 72. The Pennsylvania commission found that "Verizon's survey contains flaws in methodology which cause us to question its reliability for the purposes of establishing a proper, forward-looking, outside plant mix." *Pennsylvania UNE Order* at 117.

4. Placement Costs.

Plant placement costs are a function of a number of factors, including network routing and labor costs. An efficient carrier in a forward-looking network would select the least-cost routes and construction techniques. Riolo Reply Decl. ¶ 76. In contrast, the incumbents' embedded placement costs are not forward-looking because they are substantially constrained by the incumbents' existing networks. *Id.* Thus, for example, the embedded networks contain substantial numbers of copper wires that were spliced together by twisting two wires together by hand – a slow and costly procedure. In stark contrast, an efficient new entrant can accomplish

the same task by using a connector that accepts 25 copper pairs at a time, thereby substantially reducing the time and costs associated with the wire joining/splicing function. *Id.* ¶ 77. Similarly, reliance on the ILECs' embedded replacement costs would reflect their historical practice of installing poles on a piecemeal basis, resulting in costs that are higher than those that are incurred when pole installations are planned in advance. *Id.* ¶ 78. The unit costs of such piecemeal placements fail to reflect the scale economies available from the large-scale installation jobs that an efficient new entrant would undertake. *Id.*

For these very reasons, the *Virginia Arbitration Order* rejected Verizon's embedded aerial structure investment input data, finding that "Verizon's approach . . . probably overstates costs because it includes all of Verizon's small/individual replacement jobs. . . . and much of the recent investment in poles is due to small/individual pole placement jobs." *Virginia Arbitration Order* ¶ 300. Significantly, Verizon admitted during that proceeding that the average number of poles per job in 1999 and 2000 was less than 1.4. *Id.* Similarly, the Pennsylvania commission has rejected Verizon's embedded pole investment costs, finding that Verizon's embedded costs are "not representative of what would be achieved in a forward-looking network." *Pennsylvania UNE Order* at 125-126.

There are other significant problems with using the ILECs' "actual" placement costs in calculating UNE rates. Placement costs can vary depending upon any number of factors, including geography, labor and material costs, terrain, population density, and the characteristics of the cables and supporting structures. Bryant Essay at 3. However, the accounting records maintained by the Bells, which are notoriously unreliable, do not capture geographic cost differences and otherwise lack the detailed granular information necessary to determine placement costs. Riolo Decl. ¶ 84.

SBC contends that forward-looking placement assumptions allow "gamesmanship"—*e.g.*, through the assumption of "cheap placement methods (such as 'plowing') in modeling the costs of laying cable in highly developed areas, even though no real-world carrier could ever hope to 'plow' and then 'backfill' a paved city street." SBC at 60, 62. This argument is baseless.

TELRIC models account realistically for an impressive array of conditions that affect placement costs. Bryant Essay at 11-12. As AT&T has explained, the HAI model, for example, determines placement methods based on a variety of factors, including topography, zoning restrictions, and best engineering practices. AT&T at 57. The HAI model also accounts for the cost effects of terrain by recognizing that excavation of streets and boring through concrete are more expensive than using aerial or buried structure. Modern TELRIC models also account for other factors such as population density, labor, and material costs that can vary by state and locality. Klick Decl. ¶¶ 45-74. SBC identifies nothing in the algorithms of these models that would assume the plowing of city streets.

Equally unfounded is Qwest's contention that state regulators, including the Arizona commission, have erroneously endorsed a "time machine approach" that assumes that all cable was placed prior to the existence of streets, sidewalks, and landscaping in Arizona. Qwest at 36. In the Arizona proceeding cited by Qwest, the carrier assumed that a high percentage of the cable in rural and suburban areas of Arizona would require the excavation and restoration of streets and sidewalks, as well as landscaping. As the Arizona commission Staff pointed out, Qwest's assumptions were entirely unrealistic.[21] In the most rural areas of Arizona, there are few, if any, asphalt roads or concrete sidewalks that cannot be avoided, and there is virtually no landscaping.

[21] *See* Response Br. on the Merits, *Qwest v. ACC*, Case No. CIV-02-1626 PHX-SRB, at 17-18 (D.Ct.Az., filed Feb. 28, 2002).

And, even in suburban areas, buried cable can be placed in dirt along side roads. The Arizona commission ultimately determined that Qwest's inputs for buried cable "overstate the costs attributable to placement of cable in a forward-looking environment," and that "the HAI model relies on . . . reasonable assumption[s]." *Arizona UNE Order* at 12. This finding was clearly well founded.

D. Switching Costs

Growth Discounts. An efficient carrier installing a network today—or any firm viewing costs from a long-run perspective—would use new switches to serve all current demand and at least some expected future demand, and would purchase relatively few growth lines. The proper forward-looking costing approach is to account for new and growth lines using a proper "life cycle" cost for switching investment. Using an input for switch costs that takes into account the life cycle of the switch, with new switches at new switch discounts and growth equipment at lower growth discounts, conforms to the TELRIC pricing standard. Murray/Pitts Decl. ¶¶ 16-38; Murray/Pitts Reply Decl. ¶ 3.

The alternative costing approach advocated by the Bells—applying the unit cost of the switching equipment they have bought recently or expect to buy within the next few years to their entire inventory of switching capacity—is utterly illegitimate. *See, e.g.,* Verizon at 48-53; BellSouth at 28-29; SBC at 70-73. These purchases reflect the carriers' substantial sunk investment in existing switching equipment, and therefore are weighted heavily on growth equipment, which is considerably more costly on a per-line basis. The cost estimates generated by this approach would exceed long run incremental cost, short run incremental cost—and even the Bells' embedded costs. Murray/Pitts Reply Decl. ¶¶ 5-12.

The long run incremental costs of switching capacity, as noted above, would be those of a new entrant or other firm unconstrained by sunk investment in existing equipment, and thus

would reflect little or no investment at the higher net prices charged by switch vendors for "growth" purchases. The short-run incremental costs of switching capacity would be even lower, for much of the Bells' existing switching investment is sunk. The forward-looking cost of this sunk investment is lower in the short run than even the net discounted cost of new replacement equipment, and may be as low as zero.[22] This phenomenon is precisely what makes the continued use of the existing equipment, augmented by the purchase of growth capacity, a rational decision despite the higher unit costs of growth capacity. *See* Murray/Pitts Decl. ¶¶ 13-15. As noted above, one cannot consistently ask the Commission to recognize the higher unit costs of short-run growth purchases while ignoring the correspondingly lower opportunity costs of the sunk investment in the short run.

Indeed, the Bells' jumble of short run and long run assumptions would yield cost estimates above even the Bells' *embedded* costs. Because the incumbents have replaced *all* of their outdated analog switches with digital switches, *they obtained with respect to each and every one of their existing switches the very switch discounts that they now ask the Commission to disregard in setting network element rates.* The Bells would have this Commission allow them to charge their potential competitors inflated rates that reflect only a shallow growth discount for the use of switches that the incumbents *actually purchased* at the much deeper discount and can continue to use at virtually no added cost for years. *See* Murray/Pitts Decl. ¶¶ 13-15; Murray/Pitts Reply Decl. ¶ 11; Willig Decl. ¶¶ 107-08.

The Bells' responses to these criticisms border on the frivolous. SBC and Verizon, invoking the theory of "razorblade" pricing, assert that switch manufacturers would offer much shallower discounts for new equipment if local carriers bought most of their capacity as new

[22] *See* Alfred Kahn & William Shew, *Current Issues In Telecommunications Regulation: Pricing*, 4 YALE J. ON REG. 191, 225 (1987).

equipment. SBC at 71; Verizon at 50-53; Shelanski (Verizon) Decl. ¶ 46. The incumbents' actual performance refutes this claim. The switch prices that incumbents pay for purchases of "new" equipment today are similar to, or deeper than, those that the incumbents have paid since at least the 1980s, during which period the Bells bought most of their switching capacity at deep new-equipment discounts. Murray/Pitts Reply Decl. ¶¶ 5-9. The major switch vendors, rather than increasing their average net prices, have continued to lower them in response to cost-saving advances in computer technology. *Id.* ¶¶ 6-9.

Rate Structure. The Commission should reject Verizon's claim that switching costs should be recovered using traffic-sensitive switching charges. Verizon at 52-54. It is undisputed that switch purchasers pay on a per-line, not a per-minute-of-use, basis. Moreover, the overwhelming evidence—including the statements of Verizon's own officials in rate proceedings—shows that modern switches do not exhaust based on usage, because today's switches have substantial excess capacity. Murray/Pitts Decl. ¶¶ 39-46; *Virginia Arbitration Order* ¶ 474. Only a small percentage (less than 15 percent) of costs relating to peak periods are traffic sensitive, but as the Wireline Competition Bureau determined in the *Virginia Arbitration Order*, there is no practical way to recover peak-period costs through a traffic-sensitive charge. *Virginia Arbitration Order* ¶ 474. The use of a per-port flat fee is the most competitively neutral and economically efficient method of recovering peak-period costs. *Id.* ¶ 478; Murray/Pitts Decl. ¶¶ 53-57; Murray/Pitts Reply Decl. ¶¶ 14-15. Because switching costs largely do not vary with volume, Verizon's call to recover costs in the "manner in which they are incurred" only confirms the reasonableness of per-port prices for switching. Verizon's push for traffic-sensitive switching rates must be rejected.

Verizon's assertion (at 54-55) that a flat, per-port rate would force customers with below-average minutes of use to subsidize customers with above-average minutes of use is also

unfounded. Verizon at 54-55. As the Wireline Competition Bureau found in the Virginia Arbitration Proceeding, the only relevant usage is peak period usage. *Virginia Arbitration Order* ¶ 474. Off peak, neither high-volume users nor low-volume users incur capacity costs; hence, no subsidy can result from off-peak usage. Traffic-sensitive cost causation thus is even a theoretical possibility only during peak periods.[23] Verizon provides no evidence about which users—high volume or low volume—use switch resources during the peak period, and suggests no means by which the Commission or state regulators could implement time-of-day or peak load pricing. Murray/Pitts Reply Decl. ¶¶ 16-17.

Absent a time-of-day rate, the next best solution is the flat, per-port rate structure proposed by AT&T. The flat, per-port charge ensures that the incumbent and CLEC face similar cost structures, and it mirrors the "all you can eat" flat, per-line charges generally used by incumbents for mass-market retail customers. Given the evidence that switching costs do not vary with usage, this is the appropriate method of recovering switching costs. Murray/Pitts Decl. ¶¶ 55-57; Murray/Pitts Reply Decl. ¶¶ 16-17.

E. Cost of Capital

As AT&T explained in its opening comments, the Commission should endorse standard the techniques of financial analysis to determine the cost of capital for UNE rates. State commissions have often calculated the equity component of return on capital by applying multi-stage discounted cash flow ("DCF") or the capital asset pricing model ("CAPM") to a proxy group consisting of the Bell holding companies ("RBOCs"). The DCF and CAPM models are well-accepted tools for estimating the cost of equity, and are widely used by financial analysts

[23] During peak periods, the flat, per port rate could lead to overuse of the network because peak-period users would not incur a price that fully charges them for their use of the network. This does not appear to pose a significant problem, however, as the widespread existence of flat, per-line local services for residential and small business customers does not appear to have resulted in call blocking or required capacity additions. Murray/Pitts Decl. ¶¶ 55-56.

and other regulators. The RBOCs, as the primary providers of UNEs and other similar services provided over the network facilities, comprise the best proxy group of firms for the DCF and CAPM. Similarly, state commissions should calculate the cost of debt by examining the forward-looking yield to maturity for the publicly traded debt of the RBOCs.

The Commission should rejected the welter of "adjustments" and alternative assumptions proposed by the Bells. These proposals include: (1) use of risk proxy groups consisting of non-telecommunications firms from the S&P 500, which face substantially different (and higher) risks than an efficient wholesale provider of UNEs in a contestable market; (2) abandonment of the CAPM equity cost model; and (3) adoption of the one-stage (perpetual growth) DCF model, which assumes that that all firms in the proxy group will grow at their projected short term growth rate in perpetuity. Finally, and most egregiously, the Bells ask the Commission to inflate the cost of capital still further with additives to offset various risks from competition and regulation that supposedly have been overlooked by financial markets. These approaches are all without merit. All have been rejected repeatedly by state commissions, the federal courts, and the Commission itself.

1. The Relevant Proxy Group.

For the last eight years, state commissions have with few exceptions used the major publicly traded local telephone holding companies as the proxy group for determining the cost of capital. This result is unsurprising. It is the large local carriers that provide the UNEs which are priced at TELRIC-based rates. The RBOCs' stock is publicly traded, the RBOCs issue public debt, and the RBOCs derive the preponderance of their revenues from local telephone services. Indeed, a proxy group consist of this holding group provides a conservatively high measure of risk, for most of the Bells' lines of business—including retail local service, long distance and wireless service, and foreign operations, face significant facilities-based competition, and are

considerably riskier than the business of supplying UNEs as wholesale. Murray Decl. ¶ 66; Murray Reply Decl. ¶¶ 16-18; Willig Reply Decl. ¶¶ 111.

SBC agrees "that ILEC holding companies are a fair—indeed, conservative—proxy group to use in estimating the cost of equity." Verizon and BellSouth, however, propose a proxy group consisting of diversified industrial companies from the S&P 500. The Commission should reject this proposal. The hodgepodge of firms in the S&P 500 are not remotely representative of an efficient UNE provider. Willig Reply Decl. ¶ 114. Only a handful of the firms in the S&P 500 provide any kind of telephone service, let alone offer UNEs at wholesale. Virtually all of the firms in the S&P 500 engage in entirely unrelated lines of business, and have vastly different risk characteristics than an efficient provider of UNEs. The S&P 500 firms also require different capital outlays, use different capital stock, and have different asset lives—indeed, different almost everything. As the Wireline Competition Bureau explained in rejecting the use of the S&P 500 firms as a proxy for an efficient provider of UNEs:

> The businesses of most of Verizon's S&P 500 based proxy group of companies have no obvious similarity to the provision of local exchange services, and Verizon did not describe any. Consequently, there is no basis on which to conclude that this proxy group best represents the risks that Verizon would face if it faced facilities-based competition.

Virginia Arbitration Order ¶ 90.

Qwest's proposal to use competitive and long distance carriers as an appropriate proxy group for computing the cost of capital of an efficient UNE provider is also inappropriate. Unlike an efficient UNE provider, competitive local carriers and long distance carriers are not in the wholesale UNE business, making them unqualified as proxies for an efficient UNE provider carrier. Willig Reply Decl. ¶ 115. Most importantly, the competitive risks and current cost of capital of competitive carriers and long distance carriers are much higher than that of an efficient UNE provider in a contestable market. Long distance carriers also now face competition from

the Bells, who are able to self-supply their own access at economic costs and have an established relationship with the long distance carriers' customers. In local markets, competitive local carriers—including even the major long distance carriers—are new entrants into local markets dominated by the legacy monopoly incumbent carriers, and have obtained only tiny footholds in those markets. As a result, the competitive carriers face substantial barriers to entry, and a far greater likelihood of economic losses than would efficient sellers of UNEs. *Id.*

In defense of these higher risk proxy groups, the Bells contend that a stand-alone business devoted exclusively to the provision of UNEs would be riskier than the Bell holding companies as a whole. *E.g.,* BellSouth at 32; Verizon at 68-73. This claim is flawed on two levels. First, the RBOCs' other lines of business, such as wireless telephone service and investment in foreign companies, are considerably riskier than the wholesale supply of UNEs. This is true by definition, for the Bells have obligation to unbundle a network element at all in markets where multiple competitive providers offer the facilities in question. *See* Willig Reply Decl. ¶¶ 114-115.

Second, even assuming *arguendo* that a stand-alone UNE provider would face higher risks than the same business operating as a division of a vertically integrated holding company, there is no legitimate reason for disregarding the potential economies of integration when determining the TELRIC cost of capital. Basic economics teaches that an efficient firm will take full advantage of all available efficiency opportunities, including economies of scale and scope. Hence, "[a]n efficient UNE provider . . . will size its network to account optimally for scale economies, and will take advantage of any additional efficiencies associated with economies of scope by integrating with a firm that deploys and sells, at efficient levels, products and services that are related to the sale of UNEs." Willig Reply Decl. ¶ 112. As the Commission recently recognized in its *Triennial Review Order,* in the telecommunications markets, these additional

sales can include, among others, retail services, long distance services, broadband services, and maintenance services. *Triennial Review Order* ¶ 115; *see also id.* ¶ 519 ("The state must also consider the revenues a competitor is likely to obtain from using its facilities for providing data and long distance services and from serving business customers"); *id.* n.1585 (the impairment analysis "will therefore take into account the scale and scope economies available to carriers using existing facilities to provide a variety of services to all customers that are likely to be served by an efficient entrant"). Failing to recognize these economies of scale and scope would greatly inflate the efficient costs of selling UNEs, because they would ignore that a carrier that has deployed facilities to serve an entire geographic area can spread its costs over all customers in that area and all services provided in that area, rather than only the limited subset of UNE customers and the limited subset of UNE services. *Id.* Verizon's witness acknowledges this point. Vander Weide (Verizon) Decl. ¶¶ 44-47 (noting that a carrier can reduce cost of capital by diversifying its assets).

2. The Appropriate Models Of The Cost Of Equity.

The Commission should confirm that state commissions may continue to estimate the cost of equity with both the DCF and CAPM. Both models are widely used, and financial analysts customarily use one model as a check on the other. Murray Reply Decl. ¶¶ 24, 27; *accord*, SBC at 44 ("it is not critical for the Commission to select one specific *model* to calculate the cost of equity") (emphasis in original).

Only Verizon's expert witness, Dr. Vander Weide, claims that the CAPM is incapable of producing TELRIC compliant results without substantial modifications. Dr. Vander Weide and BellSouth expert Mr. Billingsley also ask the Commission to endorse their idiosyncratic views as to the appropriate application of the DCF technique. As explained below, the views of the two

witnesses are outside the mainstream of financial economics and, indeed, are squarely at odds with basic financial economic principles.

a. The Three-Stage DCF Approach Produces Far More Accurate Long-Run Cost Of Capital Estimates Than The One-Stage DCF Approach.

Verizon and BellSouth ask the Commission to mandate the use of a "one-stage" DCF model, which assumes that current short-term growth estimates (usually five-year estimates produced by a firm called "I/B/E/S," now part of a firm called "First Call") will continue unchanged to eternity. Vander Weide (Verizon) ¶¶ 55-58; Billingsley Decl. (BellSouth), Exh. No. RSB-2 at 2. This approach has been roundly rejected because it is based on obviously flawed assumptions. Use of a one-stage DCF implicitly assumes that firms with an above average short-term growth estimate would eventually grow to become the entire economy. Murray Reply Decl. ¶¶ 30-39. Such a result clearly is inconsistent with even the most bullish investor expectations, and the impossibility of such a result is an important clue that such a single-stage DCF model will not generally produce reliable cost of equity estimates. *Id.*

Because of the well-documented flaws of the one-stage DCF approach, financial analysts generally use multi-stage DCF models instead. Perhaps the most widely used DCF model has three stages. The first stage, which lasts three or five years, incorporates the current short term growth estimates. Then, for the next several years—"stage two"—growth rates will begin to converge to the market growth rate. And in "stage three," the growth rate will equal that of the expected market growth rate. Murray Decl. ¶¶ 83-88 (fully describing this methodology).

Economists have recognized that "[f]orecasted growth rates are obviously not constant forever" and that "[v]ariable-growth DCF models, which distinguish short- and long-term growth rates, should give more accurate estimates of the cost of equity" by "guard[ing] against naïve projection of short-run earnings changes into the indefinite future." Stewart C. Myers and Lynda

S. Borucki, *Discounted Cash Flow Estimates of the Cost of Equity Capital—A Case Study*, FINANCIAL MARKETS, INSTITUTIONS & INSTRUMENTS, vol. 3, no. 3, (1994); *accord Virginia Arbitration Order* ¶ 73 ("the finance literature concludes without exception that the [single stage DCF] model is unlikely to produce an accurate cost of equity capital estimate"). As one Nobel Prize winning financial economist put it:

> Valuing common stock with a [DCF] . . . technically requires an estimate of future dividends over an infinite time horizon. Given that accurately forecasting dividends three years from today, let alone 20 years in the future, is a difficult proposition, how do investment firms actually go about implementing [DCF]?
>
> One approach is to use constant or two-stage dividend growth, models, as described in the text. However, although such models are relatively easy to apply, institutional investors typically view the assumed dividend growth assumptions as overly simplistic. Instead, these investors generally prefer three-stage models, believing that they provide the best combination of realism and ease of application.
>
> [M]ost three-stage [DCF models] . . . make standard assumptions that all companies in the maturity stage have the same growth rates, payout ratios and return on equity.

William F. Sharpe, Gordon J. Alexander and Jeffrey V. Bailey, INVESTMENTS 590-591 (1995).

The New Hampshire PUC reached a similar conclusion in its recent cost of capital decision involving Verizon New Hampshire:

> The [three-stage DCF] model takes account of the fact that the expected growth rates of earnings and dividends quoted by financial publishing companies like Value Line and I/B/E/S may reflect expectations in the medium term but are, by the statements of these publishing companies, not intended to reflect expectations for the long term. The three-stage version takes account of this inherent limitation in the data and ensures that long term growth rates do not exceed the productive capacity of the economy itself. Such a scenario would imply that some companies will grow faster than the economy *ad infinitum*, an implication we cannot accept. At the same time, the three-stage version ensures that long term growth rates are not so low that some investors remain under-compensated. In this manner, the three-stage version strikes a balance that we find is appropriate in this proceeding. …the difference between Verizon's growth rates and the

> sustainable growth rate is far too great for us to conclude that its growth rate is sustainable indefinitely.[24]

Dr. Vander Weide tries to defend the single-stage DCF approach on three grounds. First, he asserts that it is appropriate because the I/B/E/S growth estimates reflect investor expectations. Vander Weide (Verizon) Decl. ¶ 56. But, as noted, those growth estimates are intended to cover only the next three to five years. No rational investor would expect such estimates to be accurate in perpetuity, particularly given the complete turnaround in growth rates for telecommunications firms over the most recent five year period. *See* Murray Reply Decl. ¶ 34.

Second, Dr. Vander Weide asserts that the perpetual above-average growth assumption will result only in a slight overstatement of the cost of equity because such growth assumptions are discounted to present value. But that is true only if the current growth estimates are valid for an extremely long period, which they are not. *See* Murray Reply Decl. ¶ 35.

Third, Dr. Vander Weide claims that the five-year I/B/E/S growth rates are consistent with "long-term" growth estimates called "internal growth estimates." But, as explained by Ms. Murray (¶ 36) internal growth estimates are simply the growth rate that a company can achieve without additional external funds and depend on assumptions regarding the level of a firm's retained earnings and the value of the firm's assets, neither of which can be predicted with any accuracy for more than five years, let alone in perpetuity. *Id.*

Unable to defend the single-stage DCF on the merits, Dr. Vander Weide resorts to contrived statistical attacks on the three-stage DCF. Vander Weide (Verizon) Decl. ¶¶ 60-61.

[24] Order No. 24, 265, Order Establishing Cost of Capital, *Verizon New Hampshire Investigation Into Cost of Capital*, January 16, 2004, pp. 67-68.

These analyses prove only that Dr. Vander Weide is adept at misspecifying models.[25] As the New Hampshire PUCs noted its January 16, 2004, cost of capital decision involving Verizon,

> testimony by Staff at hearing demonstrated that Verizon's one-stage application of the DCF model could, under certain conditions, produce illogical results. Both the one-stage and three-stage versions can produce a counterintuitive relationship between risk, as measured by beta (produced by the CAPM), and the cost of equity. We conclude that the apparent conflict occurs between the CAPM and DCF models and not in the difference between the one-stage and the three-stage versions. Put differently, whether or not the CAPM agrees with the DCF model empirically at any given point in time is irrelevant to the decision of whether the one-stage version should be refined.[26]

Finally, the Bells' observation that the three-stage DCF results in a lower cost of capital for Verizon than for AT&T and MCI only confirms its appropriateness. AT&T and MCI operate in highly competitive long-distance and business markets in which there are many facilitates-based carriers and substantial excess capacity. And where they compete for local customers they face myriad entry barriers as they attempt to compete against incumbent monopoly like the Bells.[27]

b. CAPM.

Only Dr. Vander Weide claims that the CAPM is entirely inappropriate for computing the cost of equity. Vander Weide (Verizon) Decl. ¶¶ 68-70. His testimony, however, is nothing more than a rehash of his testimony before the Commission in the Virginia Arbitration

[25] *See, e.g.,* Surrebuttal Testimony of John I. Hirshleifer On Behalf Of AT&T And WorldCom, Inc., CC Docket Nos. 00-25, 00-281, at 78 (FCC, September 21, 2001); *id*., Objections of AT&T and WorldCom to Verizon Response to Staff Record Request for Literature Comparing the Accuracy of One-Stage vs. Multi-Stage DCF Models (filed Dec. 18, 2001).

[26] Order No. 24, 265, Order Establishing Cost of Capital, *Verizon New Hampshire Investigation Into Cost of Capital*, January 16, 2004, at 66-67.

[27] BellSouth claims that it is appropriate to include in the DCF calculation an adjustment for "flotation costs." Billingsley (BellSouth) Decl., Exh. RSB-2 at 4-5. Flotation costs are costs associated with financing firm investments, and financial markets already account for flotation costs when setting the value and return of the firms assets. Murray Reply Decl. ¶¶41-42. Adding a flotation cost adjustment would in effect double count the cost of financing. *Id.*

proceeding, which the Wireline Competition Bureau declined to credit. *See, e.g., Virginia Arbitration Order* ¶ 72 (rejecting Verizon's criticisms of CAPM, recognizing that it is widely employed by economists, and adopting it for computing the cost of capital in a UNE rate proceeding). Nothing in his current declaration calls into question the Bureau's prior conclusion.

First, Vander Weide states that the "CAPM concludes that investors are sensitive to only one risk factor, how a company's stock varies in proportion to movements in the market as a whole." Vander Weide (Verizon) Decl. ¶ 64. According to Dr. Vander Weide, "[u]sing a single-factor model such as the CAPM, when the cost of equity actually depends on multiple risk factors, introduces a bias into the estimate of the cost of equity." *Id.* That the CAPM relies on the single risk factor he identifies is not necessarily a flaw, however, and Dr. Vander Weide has offered no reason to believe that the addition of other "risk factors" to the equation would improve the cost of capital estimate. Murray Reply Decl. ¶¶ 44-45; Willig Reply Decl. ¶ 117. The addition of some risk factors may *reduce* the cost of capital estimate, and the addition of other risk factors may increase it. *See id.* What is certain is that financial economists have long determined that the CAPM can, when properly implemented, produce an accurate measure of the cost of capital. *See id*. Murray Reply Decl. ¶¶ 44-45; *accord, e.g., Virginia Arbitration Order* ¶ 71. It is thus clear that SBC, not Verizon, is correct—both the CAPM or the DCF model can produce proper estimates of the cost of equity so long the models are properly used.

Alternatively, Mr. Vander Weide argues that if the Commission allows states to use CAPM, the Commission should prescribe national inputs using the values he endorses. Vander Weide (Verizon) Decl. ¶¶ 68-70. But the inputs to the CAPM are variables that fluctuate over time. Murray Reply Decl. ¶ 59. That means that any national requirement of inputs would have to be continually updated to reflect such changes. The better approach is to permit states to adopt the inputs to the CAPM model that are appropriate at the time of the UNE rate proceeding.

Moreover, the national inputs proposed by Dr. Vander Weide are absurdly inflated. For example, he urges the Commission to require states to set the risk free rate at the return paid on *long-term* treasury bonds, Vander Weide (Verizon) Decl. ¶ 68, which given their long-term nature are not remotely risk-free, as Verizon admitted in the Virginia Arbitration. *Virginia Arbitration Order* ¶ 79 (citing Verizon's argument "that the [long-term treasury bond] rate is not representative of the true risk-free rate due to the Treasury's 1998 decision to reduce the supply of long-term bonds."). In any event, as noted, this is an issue that must be addressed by state commissions at the time of the UNE pricing proceeding, so that states can account for changes in market conditions.

Verizon also urges the Commission to mandate that the "beta" used in the CAPM model be greater than 1.0, meaning that an efficient UNE provider is riskier than the market as a whole. Vander Weide (Verizon) Decl. ¶ 69. But, again, Verizon offers no evidence why such a firm would be more risky than the market as a whole. And empirical evidence suggests otherwise. *See* Selwyn Reply Decl. ¶¶ 57-60. Finally, Verizon urges the Commission to adopt a risk premium in the 7 to 9 percent range. Vander Weide ¶ 70. There is substantial and growing evidence, however, that the forward-looking risk premium demanded by investors is now in the range of 3 to 4 percent – well below historic risk premiums. Murray Reply Decl. ¶ 49. In any event, the forward-looking risk premium is a value that changes over time and, thus, is best computed by state commissions at the time of the UNE pricing proceeding.

3. Computing The Cost Of Debt.

UNE cost studies should incorporate a forward-looking cost of debt, which can be estimated by looking at the forward-looking yield to maturity for publicly traded debt of the relevant proxy firms. Murray Decl. ¶ 106; Murray Reply Decl. ¶ 31. And, as noted, a proxy group consisting of local telephone holding companies provides a conservatively high measure

of the relevant cost of debt. *Accord Virginia Arbitration Order* ¶¶ 66-67; *see also* Murray Reply Decl. ¶ 31.

Aside from advocating the use of bonds issued by non-ILEC firms,[28] the Bells try to inflate the cost of debt by urging the Commission to mandate that debt costs be determined solely with regard to very long-term debt (*i.e.,* with maturities longer than 25 years). *See, e.g.,* SBC at 47; Vander Weide (Verizon) Decl. ¶¶ 48-50. But the use of such very long-term debt would flatly contradict the use of the much shorter economic lives the Bells use for most of the asset categories that the debt is supposedly financing. *See* Murray Reply Decl. ¶ 52. Basic economics teaches that the economic lives of the assets being financed should act as a ceiling on the term of the bonds used to compute the cost of debt. *Id.* An example illustrates this point. A car is a relatively short-lived asset. Because the economic life of a car is generally between 5 to 10 years, the term of most car finance loans is less than 10 years. Indeed, a debt holder would prefer to not hold debt where the economic value of the underlying asset has already reached zero. It would thus be very difficult to find a lender that would allow a purchaser of a car to finance the car using a 30 year loan. *Id.* ¶ 100.

Similarly, if an ILEC were financing its network today, only a small fraction of its assets would qualify for very long-term financing. Accordingly, it is appropriate to use a mix of short-term and long-term bonds when computing the relevant cost of capital. *See* Murray Decl. ¶ 108; Murray Reply Decl. ¶¶ 33-54. Moreover, the Bells' claim that the very shortest term debt should be excluded altogether is a red herring. The Bells claim that this debt is used only for "working capital." But as demonstrated in Ms. Murray's initial testimony (¶ 108), the Bells are

[28] For the reasons discussed above, the Bells' proposals that cost of debt be determined using the yields of non-ILECs, *see* Billingsley (BellSouth) Decl. ¶ 21 (S&P 500 firms); Vander Weide (Verizon) Decl. ¶ 48 (Moody's "industrials"), should be rejected.

increasingly relying on very short term debt for requirements beyond working capital, presumably to take advantage of the very low short-term rates that are currently available.

4. Capital Structure.

As demonstrated by AT&T in its initial comments, the relevant mix of equity and debt capital should reflect the firm's ideal, or "target," capital structure. *See* Murray Decl. ¶¶ 109-19. The Bells, however, support the use of a "current" market structure, *i.e.,* the market structure that can be computed at any moment from the current prices of the firms' stock and debt. *See* Billingsley (BellSouth) Decl. at 13-17; SBC 48-49; Vander Weide (Verizon) Decl. ¶¶ 71-73. The Bells defend this "snapshot" market structure on the theory that it reflects investor expectations. *See* Billingsley (BellSouth) Decl. at 13-17; SBC 48-49; Vander Weide (Verizon) Decl. ¶¶ 71-73. That is nonsensical.

No rational consumer would assume the market structure at a single point in time, given the then-existing prices for a firm's stock and bond offerings, would persist unchanged a few days later, let alone over the long run. Murray Reply Decl. ¶ 56. Indeed, as stock and bond prices change so does the market-based capital structure. *Id*. And as BellSouth's own witness concedes, an appropriate forward-looking capital structure should reflect the "optimal, *sustainable* capital structure," Billingsley (BellSouth) Decl. at 12-13, not an ephemeral market-based snapshot.

5. Illegitimate Risk "Add-Ons."

Lastly, the Bells try to inflate the cost of capital by tacking on arbitrary "add-ons" to the cost of capital, regardless of the cost models used to compute it. The Bells argue that these add-ons are justified because the existing techniques for computing the cost of capital fail to account for four "special" risks: (1) competitive market risk; (2) regulatory risk; (3) lease cancellation risk; and (4) "options" or "sunk cost" risk. As demonstrated by Professor Willig, however,

current cost of capital methodologies do account for these risks because current methodologies are based on the expectations of financial markets, which account for such risks. Moreover, certain of the purported "risks" identified by the Bells, may actually be "upside" risks, which, if separately incorporated into the cost of capital, would result in *lower* cost of capital estimates.

Competitive Risk. There can be no serious claim that the cost of capital should be grossed up to reflect additional "competitive risk." Even Verizon's cost of capital witness concedes that "[c]ompetitive market risk is included in estimates of the market cost of capital." Vander Weide (Verizon) Decl. ¶ 14. That is because cost of capital estimates are based on equity prices and growth expectations as determined by financial markets, and financial markets in setting prices and expectations account for all available and relevant information, including competition-related risk. Willig Reply Decl. ¶ 117. This is true regardless of the group of firms that are used as a "proxy" to estimate the cost of capital. *Id.*

Regulatory Risk. There is obviously no need to account for "regulatory risk" if the RBOCs are the proxy group of firms used to compute the cost of capital, because the financial markets' prices and growth expectations used to compute the cost of capital would fully reflect such risk. Willig Reply Decl. ¶¶ 118-21. It is no secret to the financial community that UNE providers are subject to regulatory requirements, including the unbundling obligations imposed by the 1996 Act, and the TELRIC pricing standard established by this Commission. There is no serious evidence in this record challenging the view that the cost of capital using the incumbents as proxy firms fully reflects any risk associated with regulation.

The incumbents' claim that regulatory risk must be added to the cost of capital is thus tied to the incumbents' flawed claim that the cost of capital should be based on a proxy group of firms that are not involved in the sale of UNEs or, in many cases, not even involved in the telecommunications industry. *Id.* ¶ 120. For the reasons explained above, those arguments are

misguided. Moreover, the exercise urged by the Bells would be a fool's errand even if the use of a non-telecommunications proxy group were otherwise appropriate. The Commission would be required to identify and make adjustments to the cost of capital estimates to account for different regulatory risks associated with the group of proxy firms and the hypothetical efficient UNE provider. That is no small endeavor. It would require the Commission (or state commissions) not only to account for risks that do not exist in the proxy firm industries, but also would require the *subtraction* of risks that exist in the proxy firm industries, but not in the telecommunications industry – such as environmental regulatory risks, product liability litigation risks, safety-related regulatory risks and risks faced by companies with substantial overseas operations (*e.g.,* foreign exchange, expropriation and terrorism). Willig Reply Decl. ¶ 120.

Lease Cancellation Risk. Lease cancellation risk, as described by the Bells, refers to the risk that a competitor may cancel a lease for UNEs. As with regulatory risk, there is obviously no need to account for lease cancellation risk separately if the incumbents are the proxy group of firms used to compute the cost of capital: the financial markets, which for years have been tracking economic factors effecting incumbent growth, would reflect such existing and forward-looking risk in the market prices and growth expectations used to compute the cost of capital. *Id.* ¶¶ 123-35. It is no secret to the financial community that competitors lease unbundled network elements, and that they may cancel such leases on relatively short notice. *Id.* Moreover, most other major services offered by the Bells—including retail local service, long distance and wireless service—are also provided under tariffs or contracts that allow the customer to cancel on relatively short notice compared with the life of much of the sunk investment needed to provide the service.

The Bells' claim that the cost of capital computations should be increased to account for lease cancellation risk, therefore, like regulatory risk, is tied to their claims that the Commission

(or state commissions) should use non-RBOC firms as a proxy when computing the cost of capital and fails for those same reasons. *Id.* ¶¶ 123-25. Moreover, the Bells' claim that making their proposed one-sided risk adjustment would necessarily *increase* risk does not withstand scrutiny. Under the Bells' theory, when a competitor cancels a lease, the incumbent somehow is worse off. But that is only true only in the unlikely circumstances in which the competitor transitions the customer to non-incumbent owned facilities, or when the customer previously served by the competitor using the unbundled network elements becomes unprofitable even for the incumbent. *Id.* ¶ 125. In virtually all other cases, the cancellation of a UNE lease is good news for the incumbent, because the incumbent get to serve the retail customer formerly served by the competitor and thus earn retail rates for the UNE facilities rather than the lower wholesale rates. Any adjustments to account for lease adjustment, therefore, likely would decrease, not increase, the cost of capital. *Id.*

The New Hampshire commission recognized this in its January 16, 2004, cost of capital decision:

> It is also unclear on this record to what extent Verizon faces the risk of stranded investment as the result of the departure of any group of customers. Both UNE and retail facilities typically can be re-used by Verizon to serve other customers in the same line of business or to serve customers in the other line of business. This substantially reduces the extent of risk faced by Verizon. Investments made to serve retail customers can ordinarily be recovered under rate of return regulation, so long as the expenditures are prudent.

NH COC Order at 42-43. *See also id.* ("Whatever the case may be with respect to CLEC business models, the risk of demand reductions is not unique to Verizon's UNE line of business given that retail customers who have not signed special contracts are free to take their business to competitive carriers").

In this regard, at least some Bells have not tried to require that competitive carriers enter into long-term lease contracts, indicating that they believe shorter term leases *reduce* rather than

increase their risk. The New Hampshire commission recognized this point too in its recent decision:

> As the CLEC parties pointed out, it is Verizon that restricts CLEC UNE leases to one-month terms, and declines to offer longer term non-cancelable UNE leases. Presumably this is a result of a judgment by Verizon that its risk is decreased, not increased, by shorter terms, notwithstanding the associated exposure to increased risk of CLEC discontinuance of service.

Id. at 45-46.

Options Risk and Sunk Investment Risk. The Bells' proposals to add a risk premium to account for "options risk" badly misapplies options risk theory. Willig Reply Decl. ¶¶ 125-32. According to the Bells, under the current regulatory regime, they must make "sunk" cost investments today to make UNEs available to competitors, a commitment that eliminates their "option" to make those investments in the future. NERA (BellSouth) at 44-46; SBC at 38-43; Verizon at 68-76. Because the option to delay making sunk investments has a value, the Bells argue that their "costs" are greater than those computed using traditional cost of capital techniques. The Bells' analysis is inaccurate and incomplete.

The DCF and CAPM techniques use current stock prices and financial market growth expectations to compute the cost of capital. Financial markets are, of course, fully aware of the costs associated with making investments today, and, therefore, the equity prices and growth expectations of the financial markets fully reflect options costs and benefits. As a result, options costs and benefits are addressed by standard cost of capital techniques. Willig Reply Decl. ¶ 126. In this regard, Verizon's witness, Dr. Pindyck, ultimately acknowledges that the options value may already be implicitly incorporated into the current cost of capital techniques – which is presumably why Dr. Pindyck is careful to state only that such "options" costs are not "*explicitly*" reflected in those models. Pindyck (Verizon) Decl. ¶ 23.

In any event, even if an options additur could be appropriately incorporated into the cost of capital, it is not clear that the additur would be positive. As explained by Professor William Baumol, for example, the general options theory relies on assumptions that are not valid when assessing the pricing of unbundled network elements. *See* William Baumol, *Options Value Analysis and Telephone Access Charges*, THE NEW INVESTMENT THEORY OF REAL OPTIONS AND ITS IMPLICATIONS FOR TELECOMMUNICATIONS ECONOMICS (1999). First, the Bells' option analysis implicitly assumes that the provision of UNEs requires the Bells to make positive net sunk investment in facilities. In fact, however, "the grant to the [competitors] . . . of access to the LECs' facilities is likely to require little, if any, expanded investment commitment" because "if [competitive] . . . entry into the local telecommunications markets is successful, it will mean that the LECs will lose some of their local business to the new entrants . . . [which will] reduce the LECs' use of their own facilities, leaving unused capacity available for rental to the [competitors]." *Id.* at 217. "More than that . . . *the LECs have repeatedly contended that entry will leave them with substantial stranded assets* . . . [which] is tantamount to saying that . . . the LECs expect to have considerable excess capacity left on their hands." *Id.* Moreover, as noted above, the Bells have repeatedly (and thus far successfully) argued that they are under no legal obligation to make capital investments *even if they would otherwise lack the capacity to satisfy the demand for UNEs from CLECs*. If the Bells will not be required to make new sunk investments to provide unbundled network elements, there is no forgone option to delay such investment.

But even if Bells were required to make new sunk investments, it is not clear that the option value of that investment would increase the cost of capital. Sunk investment has at least two option-related effects. First, sunk investments eliminate the option of delaying those investments to the future, which is the "cost" identified by the Bells. Willig Reply Decl. ¶ 127.

Second, sunk investments provide the incumbents with benefits associated with being the first mover, which are "options" to provide existing services at lower cost and to expand services in the future. *Id.*[29]

The bottom line is that the Bells' discussion of options theory is quite incomplete. The Bells fail to recognize that the values and costs of such options likely are reflected in the data used by existing cost of capital techniques, and thus represented by current cost of capital estimates. Furthermore, the Bells fail to recognize that the value of such options may, in fact, be zero or even negative, requiring a *decrease*, not an increase, in the cost of capital estimates currently used by state commissions.[30]

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[29] That there are "option" benefits to making the sunk investment is intuitive. Consider a new business complex that does not currently have telephone service. The incumbent can either build facilities to that business today, or delay such deployment. By deploying telecommunications facilities to the business today, the incumbent loses the option of delaying those investments. But the incumbents also gains the "option" to deliver those services without incurring the massive additional costs associated with being the "second mover" in a market where there are substantial benefits to being the "first mover." These fundamental concepts are well recognized in the industry and by fundamental financial textbooks. *See* Richard Clarke, *Rethinking The Implications Of "Real Options" Theory For The U.S. Local Telephone Industry*, THE NEW INVESTMENT THEORY OF REAL OPTIONS AND ITS IMPLICATIONS FOR TELECOMMUNICATIONS ECONOMICS (1999); Richard Brealey and Stewart Meyers, PRINCIPLES OF CORPORATE FINANCE, 620-22 (2000); Michael Pelcovits, *Application of Real Options Theory to TELRIC Models: Real Trouble or Red Herring*, THE NEW INVESTMENT THEORY OF REAL OPTIONS AND ITS IMPLICATIONS FOR TELECOMMUNICATIONS ECONOMICS (1999).

[30] The Bells do not address whether the Commission should adopt a UNE-specific cost of capital. For the reasons stated in AT&T's initial comments, while it would be appropriate to allow states to retain the "option of establishing UNE-specific costs of capital," *Notice* ¶ 90, data limitations may prevent regulators from differentiating with precision the risks and capital costs of individual UNEs, and, therefore, state commissions should not be required to do so. There is also no need for a Commission-mandated cost of capital because State commission's are perfectly capable of overseeing and even making the relevant computations. *Cf.* Qwest at 46. The cost of capital will vary from ILEC-to-ILEC as each ILECs is a separate company and likely have different risk structures. Further, the cost of capital changes over time. That means that, in order to adopt its own cost of capital the Commission would have to conduct frequent periodic updates of the national cost of capital—indeed, any time that there was a UNE rate case before a state commission. It obviously is far easier to permit state commission to compute the relevant cost of capital at the time of a UNE rate proceeding.

F. Depreciation

The comments broadly confirm that the Commission's regulatory lives should be used to calculate depreciation under TELRIC, as most state commissions have held. The ILECs, however, argue that the Commission should adopt financial book lives, determined in accordance with Generally Accepted Accounting Principles ("GAAP"), in developing UNE rates. Lacey (Verizon) Decl. at 2. All of the ILECs' arguments, however, have been repeatedly rejected by both the Commission and the state commissions.

1. The Bells Have Failed, Once Again, To Offer Any Empirical Evidence That Existing Regulatory Lives Are Too Short To Be Forward-Looking.

As AT&T explained in its initial comments, there is ample evidence that the regulatory lives prescribed by the Commission, and used by most state commissions in UNE pricing cases, are forward looking. These lives are based on explicit consideration of changes in technology and competition anticipated by the Bells, and the conservatively high level of the depreciation charges they generate has received empirical confirmation from the rising level of Bell depreciation reserves over the past two decades. AT&T at 93-95; Lee Decl. ¶¶ 11-34.

The only counterevidence offered by the Bells in their initial comments is the fact that the Commission's regulatory lives are longer than the lives forecast by Technology Futures Inc. ("TFI"), a consulting firm that specializes in advocating short depreciation lives for its Bell clients in regulatory proceedings. *See, e.g.,* Lacey (Verizon) Decl. ¶ 22; SBC at 52-53. These TFI lives have been thoroughly discredited. Lee Reply Decl. ¶¶ 18-31 & Att. 3-4.

TFI develops its life estimates largely through "substitution analysis," which attempts to forecast the pattern by which new technology will replace old technology. TFI predicts here, as it has over the last decade, an imminent "avalanche" of retirements in various accounts based upon its claimed application of past retirement patterns of obsolete technologies to future circumstances. In particular, TFI assumes that the ILECs will soon replace their narrowband

telecommunications networks with broadband integrated networks capable of providing both telecommunications services and high-speed data services, and the resulting widespread deployment of fiber loop plant will make existing copper plant obsolete. TFI predicts that this will also drive the ILECs to upgrade transmission systems, replace existing circuit equipment, and deploy packet switching equipment. Lee Reply Decl. ¶¶ 21-22.

This "substitution analysis" is fundamentally flawed. To begin with, to the extent that replacement is driven by the desire of the ILECs to provide broadband, those depreciation costs are not "attributable" to UNEs being purchased by CLECs. AT&T at 53-55. As noted, the *Triennial Review Order* limited access to only the narrowband portion of hybrid loops.

In all events, TFI's substitution analysis is no more than elaborately packaged guesswork. There is no evidence, for example, that copper cable is on its way out in the foreseeable future, and no *a priori* reason to assume that advances in technology will shorten, rather than lengthen, the lives of existing assets. The advent of DSL, for example, has lengthened the life of copper cable; and ATM/IP switches are being deployed as complements for digital circuit switches, not as their substitutes. Lee Reply Decl. ¶¶ 23-26.

Unsurprisingly, history has not been kind to TFI's prognostications. The asset lives forecasted by TFI over the last decade have consistently been proven far too short, Lee Decl. ¶¶ 26-29 & Att. 3-4, and the Commission has declined to accept them. In the 1998 Biennial Review, for example, the Commission found that "[t]here is no evidence that the large wave of plant replacements forecast by TFI, which should result in increased retirements, has begun or is about to begin." *1999 Update* ¶ 16. In the *Virginia Arbitration Order*, the Wireline Competition Bureau rejected Verizon's use of financial reporting lives and supporting TFI studies, finding them too heavily reliant on unrealistic assumptions regarding massive retirement of copper. *Virginia Arbitration Order* ¶ 118 ("the TFI study assumes that new technology will

result in massive waves of retirements (e.g., replacements of copper cable by fiber-to-the home facilities). Although TELRIC assumes that the value of an incumbent network is constrained by the widespread deployment of the most efficient technology currently available, that does not mean that it is appropriate to assume massive retirements of copper facilities"). The Bureau further concluded that "AT&T/WorldCom convincingly demonstrate that past TFI studies have been extremely aggressive in their projections, and that actual incumbent LEC retirements have proceeded at a much slower pace." *Id*.

Finally, BellSouth's claim (at 36) that the history of switching technology demonstrates a rapidly accelerating rate of displacement is simply false. BellSouth has contrived this apparent trend by excluding both current digital switching technology and very early switching technology. As Mr. Lee shows, when one looks at the *entire* history of switching development, the rate of technological change has hardly accelerated at all. Lee Reply Decl. ¶¶ 32-34.

2. GAAP Lives Are Too Conservative To Be Included in TELRIC.

The Bells' reliance on GAAP (financial) lives is also unsupported. AT&T at 95-97; Lee Decl. ¶¶ 35-41. Financial lives are completely inappropriate as a proxy for economic lives, because they are driven by the GAAP principle of conservatism, which encourages the accountant to err on the side of overstating costs for financial reporting when there is uncertainty about their precise level. Because of the GAAP principle of conservatism, financial book lives are much shorter than the lives prescribed by the Commission, and thus would lead to substantially higher annual depreciation expense and UNE rates if incorporated into TELRIC. Lee Reply Decl. ¶¶ 7-8.[31]

[31] For these reasons, the GAAP lives of long distance carriers and cable TV operators would provide no justification for relying on Bell financial lives here – even if (contrary to fact) long distance carriers and cable operators had the same assets and depreciation practices as the Bells. Lee Reply Decl. ¶ 35.

The Commission has repeatedly rejected the argument that GAAP lives should be used for regulatory purposes. In 1993, for example, the Commission found that adopting GAAP lives would allow the ILECs to overstate their costs (and thus understate earnings). "Although conservatism is effective in protecting the interest of investors, it may not always serve the interest of ratepayers." *Depreciation Order* ¶ 46.

The Commission found that "GAAP would not effectively limit the opportunity for LECs to manage earnings" and would not offer "adequate protection for ratepayers." The Commission rejected the use of GAAP again in its *Universal Service* proceeding in 1999, and found that the ILECs had not explained why financial book lives "would also reflect *economic* depreciation." *Universal Service Order* ¶ 48 (1999) ("although conservatism is effective in protecting the interests of investors, it may not always serve the interests of ratepayers"). The Commission again found that "[t]he depreciation values used in the LECs' financial reporting are intended to protect investors by erring on the side of conservative understatement of net assets, partially achieving this goal by erring on the side of over-depreciation" – preferences that "are not compatible" with regulatory measures of depreciation. *Id.*

Verizon's witness Dr. Lacey argues that GAAP has rescinded the principle of conservatism. Lacey (Verizon) Decl. at 15-17. Specifically, he asserts that the Accounting Standards Executive Committee eliminated the principle of conservatism in 1993 when it repealed "Accounting Principles Board Statement 4, Basic Concepts and Accounting Principles Underlying Financial Statements of Business Enterprises" ("APB Statement 4"). This claim is a mischaracterization of GAAP. APB Concepts Statements No. 2 ¶ 91 *et seq*. ("Conservatism") was *not* repealed. Paragraphs 91 *et seq*. provide a detailed exposition of the currently operative principle of conservatism, and paragraph 95 in particular expressly provides that "if two estimates of amounts to be received or paid in the future are about equally likely, conservatism

dictates using the less optimistic estimate." Because the Concepts Statements stand on their own, the repeal of APB Statement No. 4 thus has no impact on financial reporting. *See* Lee Reply Decl. ¶ 11.

In the recent arbitration between AT&T and Verizon Virginia before the Wireline Competition Bureau, Dr. Lacey conceded on cross-examination that the Concept Statements represented "current accounting standards."[32] For that and other reasons, the Wireline Competition Bureau expressly rejected Verizon's contentions (based on Dr. Lacey's testimony) that financial book lives are an appropriate measure of the economic life of an asset. *Virginia Arbitration Order* ¶ 116.

The Bells gain nothing with their alternative argument that the conservatism of GAAP is not is merely a tie-breaking principle that works only in contexts where the appropriate value is uncertain. No accounting item is more uncertain or difficult to quantify with precision than the expected economic life of a class of assets. If the conservatism principle applies anywhere, it applies in this context. *See* Lee Reply Decl. ¶¶ 13-14 (citing FASB, Statement of Financial Accounting Concepts No. 2, *Qualitative Characteristics of Accounting Information* (May 1980) ¶ 85). And the Bells' suggestion that the accounting profession has now abandoned conservatism is particularly insupportable in the wake of the numerous recent high-profile accounting scandals involving Enron and other publicly trade companies—scandals that have only reinforced the instinctive conservatism of the accounting profession. Lee Reply Decl. ¶ 15.

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[32] *Petition of WorldCom, Inc., Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia, Inc., and for Expedited Arbitration*, CC Docket No. 00-218 *et al*., 11 Tr. 3314 (Oct. 23, 2001) ("*Virginia Arbitration*"). In an attempt to salvage his testimony, he offered interpretations of the conservatism principle that would have essentially drained it of all meaning. Nothing in the GAAP pronouncements cited by Dr. Lacey suggests that the accounting profession intended to nullify the conservatism principle in this way. *See* Lee Reply Decl. ¶ 12.

Indeed, the Bells themselves clearly do not believe that GAAP's aggressively conservative depreciation lives are accurate. In recent years, the Bells have repeatedly supplemented their quarterly earnings reports with so-called "non-GAAP reconciliations." *See* Lee Reply Decl. ¶ 17. These "reconciliations" are offered to give investors a more useful picture of the company's financial condition. Both BellSouth and Qwest have provided reconciliations to their GAAP figures for "asset impairments" and "depreciation"; and in each case these companies have made clear to investors that GAAP has overstated the extent to which its assets are "impaired" or "depreciated." *See id.* This is simply further confirmation that GAAP is far too conservative to be used as the standard for depreciation under TELRIC.

Finally, the Bells' claim that they would have no incentive to understate depreciation is also false. Lacey (Verizon) Decl. ¶ 31. Although the adoption of longer depreciation lives will increase a company's *reported* earnings in the short run, this accounting change does not increase a company's *long-term* earnings or cash flows at all. In contrast, adoption of shorter financial book lives *can* increase a company's *long-term* earnings if regulatory commissions adopt them and thereby agree to higher UNE prices. Lee Reply Decl. ¶ 16. The slight increase in reported earnings would be well worth the erection of a barrier to competitive entry by CLECs, which would allow the ILEC to maintain supranormal revenues and profits. *Id.*

G. Expense Factors

For eight years, in hundreds of litigated UNE rate proceedings, forward-looking expense estimates have been based on cost factors that are determined by applying historical expense/investment ratios to cost model estimates of forward-looking investment. All cost models use this approach, including models developed by both CLECs and ILECs in state UNE proceedings as well as the Commission's own synthesis cost model. As Mr. Klick explains, this is also the standard approach used in other network industries, including those that have been

subject to price cap and other incentive regulation. Klick Reply Decl ¶¶ 59-60. The well-established cost factor or "ACF" approach reflects the reality that competition and advances in technology lead to substantial reductions in operating expenses. Long historical experience confirms that those cost reductions will track expected reductions in investment from historical levels. *Id.*; Klick Decl. ¶¶ 111-121.

The Bells now contend that the Commission should *prohibit* state commissions from using this long-standard approach to expenses, because, according to the Bells, their own expenses cannot be expected to decline in tandem with reductions in investment relative to historical levels. The Bells present no actual evidence that this is so; indeed, as detailed below and in the declarations of Mr. Klick, the evidence is to the contrary. Moreover, the Bells' proposed alternative—using their actual, embedded operating expenses—is flatly insupportable. The Bells claim that embedded costs are appropriate because price cap regulation has made them efficient, but, as demonstrated above, that is plainly false. And even if price caps had made the ILECs efficient in the operation of their existing networks, embedded costs would still not be a reasonable proxy for efficient forward-looking costs, for the simple reason that the new modern equipment that an efficient entrant would deploy today would have substantially lower operating and maintenance costs.

1. Embedded Expenses Cannot Serve As a Proper Basis for Determining Forward-Looking Expenses.

The ILECs' current expenses cannot be presumed to approximate forward-looking costs. The ILECs' embedded expenses must be reduced by a cost factor, because an efficient, forward-looking network would consist of improved systems require less maintenance and labor than the ILECs' current networks. AT&T at 101. If anything, the use of an ACF may well *overstate* forward-looking costs, because such ratios do not fully capture the expense reducing effects of newer, state-of-the-art assets that are less costly to operate and maintain than the assets reflected

in the ILECs' embedded asset base. Klick Decl. ¶¶ 122-129; Klick Reply Decl. ¶ 58. Indeed, the ILECs' own current cost-cutting efforts belie any notions that their current networks are optimally efficient. *See* Klick Decl. ¶¶ 123-125; Klick Reply Decl. ¶¶ 61-63. Thus, as the *Virginia Arbitration Order* recognized, the ILECs' existing expenses do not reflect those of an efficient carrier. *Virginia Arbitration Order* ¶¶ 136-160.[33]

The experience of other network industries is strong evidence that a provider of telecommunications services operating in a competitive or contestable market can reasonably be expected to achieve, on a long-run-basis, reductions in expenses comparable to those generated by applying the ACF. *See* Klick Decl. ¶¶ 111-121; Klick Reply Decl. ¶ 59. But evidence from the telecommunications industry itself belies any notion that the ILECs' expenses will remain constant. *See, e.g.*, Klick Reply Decl. ¶¶ 67-70 (describing downward trend in prices of state-of-the-art equipment). The Bells' own recent cost-cutting initiatives reflect a recognition that they can, and will, reduce their expenses substantially in the future. Technological improvements and advances in manufacturing processes, which are far less labor-intensive, make it even more likely that expenses will decrease substantially on a forward-looking basis. Klick Decl. ¶¶ 127-129; Klick Reply Decl. ¶ 66.

The Bells fail to substantiate their claims. Although Verizon alleges that "incumbents' operating expenses have actually been increasing," it cites only its own data to support that claim –and those data reflect only a subset of Verizon's total expenses. *See* Verizon at 59 (describing increases in its network, marketing and corporate expenses and its general and administrative overhead). Even those data are entitled to no weight, for Verizon has identified neither the

[33] Contrary to SBC's contention, basing forward-looking expenses on the ILEC's actual experience would not "eliminate the need for the Commission to rely on speculation about forward-looking improvements or assumptions about what factors might influence expenses going forward." The ILECs' own cost data do not fully and accurately capture its "actual experience." *See* Klick Decl. ¶¶ 122-130.

source nor the basis of the data. *Id.* The data are also largely drawn from Verizon *retail* operations, which are not directly relevant to the wholesale expenses at issue in setting UNE prices.

And those data comparisons between 1991 and 2002 are, on their face, highly suspect. Verizon, for example, has made the opposite claims to the investing public, stating that its mergers with GTE and NYNEX would result in over $1 billion savings in ongoing costs. Klick Reply Decl. ¶¶ 71-75. Verizon offers absolutely no basis for its assertion that labor costs and the expenses associated with "sophisticated digital equipment" will increase. *Id.* In fact, the evidence shows that, contrary to Verizon's assertions, improvements in new technology and more efficient procedures have enabled carriers to reduce the labor costs in such areas as the construction of outside plant. *Id.* ¶¶ 77-78. Furthermore, Verizon's argument regarding the complexity of the repair of "sophisticated digital equipment" is refuted by the above-described evidence that the newer-generation assets upon which the investments in a forward-looking network are based are more efficient, and *less* costly to maintain, than the assets reflected in Verizon's current investment base.[34]

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[34] Qwest's claim that state commissions and CLEC cost studies have recognized only a "small fraction" of its embedded expenses is based on bad data and is disingenuous. Qwest at 47. First, The accuracy of those data are highly questionable. A 1998 report by the accounting Safeguards Division of the Commission's Common Carrier Bureau found that 24.7 of the records that it sampled regarding Qwest's plant either were not found or could not be verified. The report further concluded that significant questions existed as to the valuation of then-US West's plant, and that the problems revealed in the audit were continuing problems that were unlikely to be corrected for some time. *See* Audit of the Continuing Property Records of US WEST Telephone Operating Companies As of June 30, 1997, dated December 22, 1998, ¶¶ 3, 36-37. Furthermore, at the time of the UNE rate proceedings to which Qwest refers, Qwest's financial results were in question, and Qwest could not verify the accuracy of its reported ARMIS data. In any event, even if embedded expenses could be a suitable surrogate for forward-looking costs (and they cannot), Qwest calculated its "fractions" by using the embedded expenses for its entire network as the denominator. These expenses are overinclusive, because they improperly encompass (1) expenses attributable to its retail operations, contrary to the Commission's regulations (*see* 47 C.F.R. § 505(d)(2)), and (2) the expenses for *all* of the UNEs that Qwest provides—in contrast to

(continued . . .)

Qwest's "empirical evidence" is likewise valueless. Qwest at 49. As Mr. Klick explains, Qwest's study is statistically meaningless because it failed to undertake the type of comprehensive, granular correlation analysis necessary to test whether the relationship between investment and expense per line has, in fact, changed. Klick Reply Decl. ¶¶ 77-79. Thus, for example, Qwest failed to control for relevant macroeconomic variables, such as population and economic growth factors, and other factors that vary geographically. *Id.* ¶ 79. On the other hand, employing a rigorous and granular analysis of the relationship between expense and investment, AT&T witnesses have demonstrated that there is a strong correlation between expense and investment, and that expense-to-investment ratios are a valid mechanism for depicting this correlation. *Id.* ¶ ¶ 80-81.

2. ACFs Do Not Understate Certain Types Of Expenses.

In addition to their general claim that the Commission should use embedded expenses, Qwest and SBC claim that the Commission should limit state discretion with respect to certain specific expenses: General Support Assets ("GSA") expenses, product management and sales, and the shared cost allocator. None of these claims has merit.

GSA Expenses. In yet another attempt to get the Commission to resolve specific claims that Qwest is currently pursuing in federal district court, Qwest argues that the Minnesota commission has incorrectly calculated is GSA expenses. Qwest at 50-51. This claim is

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(. . . continued)
the CLEC cost studies criticized by Qwest, which calculated forward-looking expenses only for those UNEs that were actually at issue in the particular cost proceeding. *See* Utah PSC Docket No. 02-049-85, Transcript of Proceedings held January 10, 2003, at 847-848 (testimony of Douglas Denny) ("For example, unlike Qwest's cost model, the CLECs' cost model in the Qwest region did not calculate the expenses associated with non-recurring costs, collocations, or many of the more than 100 other elements on Qwest's wholesale price list.")

completely baseless, and in all events is certainly no basis for modifying the Commission's TELRIC rules.

The Commission's rules properly forbid state commissions from adopting UNE rates that include any GSA expenses that support *retail* operations, because CLECs do not have access to Qwest's retail capabilities.[35] Rather, CLECs access only the network itself and employ their own customer service representatives and provide them with any necessary desks, computers and cars.

Because Qwest and other incumbents have long been monopoly providers of local telephone services, their GSA expenses, as reported to the Commission, are generally the only publicly available data regarding GSA expenses for local telephone companies. Accordingly, the Minnesota commission, like state commissions nationwide, relied on Qwest's publicly reported GSA expenses as a *starting point* for estimating the forward-looking GSA expenses of an efficient carrier. *MN Final Decision* ¶ 65. Qwest's reported data, however, could serve only as a starting point, because Qwest's reported GSA expenses include *all* of its GSA costs, including those related solely to Qwest's retail operations—*e.g.*, the cars, desks and computers that Qwest's retail customer services representatives use. The Minnesota commission therefore removed retail-only costs from Qwest's reported aggregate figures. But even embedded GSA costs (excluding retail-only costs) are not the proper measure. The Minnesota commission could not merely assume that Qwest's GSA costs, which reflect that Qwest has historically faced little competitive pressure to be efficient and cut costs, are those that an efficient carrier would incur today. *Local Competition Order* ¶¶ 704-711. Accordingly, the Minnesota commission adjusted the GSA figure so that it represented the GSA costs that an efficient forward-looking carrier

[35] *See* 47 C.F.R. § 51.505(c)(2)(i) ("The sum of the allocation of forward-looking common costs for all elements and services shall equal the total forward-looking common costs, *exclusive of retail costs*") (emphasis added); 47 C.F.R. § 51.505(d)(2).

would incur. *MN Final Order* ¶ 65. Because the efficient forward-looking direct network costs are lower than Qwest's bloated book costs, this standard process produced an appropriately reduced and efficient forward-looking wholesale GSA cost estimate. *Id*.

Qwest is wrong in contending that an adjustment to its reported GSA costs to remove retail-only costs was unnecessary because those costs are automatically removed when the per-unit UNE prices are calculated by spreading costs over all units of demand, including the portion served by the ILEC's retail operations. *See* Qwest at 51 n.124. The calculation of per-unit UNE costs is intended to ensure that purchasers of UNEs pay only that portion of the costs of the *wholesale* network, including GSA costs needed to provide wholesale services, that they in fact use. Calculation of per-unit UNE costs does *not* allocate an "appropriate share" of Qwest's GSA costs between Qwest and CLECs, as Qwest claims. *See id.* To the contrary, because Qwest must bear 100% of the retail-only GSA costs, those costs must be stripped out *before* the purely wholesale costs (including GSA) are allocated among users of the wholesale network. Failing to remove retail-only costs from the GSA cost before spreading those costs across all lines would have required CLECs to bear a portion of these retail-only expenses, in direct violation of the Commission's TELRIC rules.

Product Management and Sales Expenses. Equally baseless is Qwest's claim (at 52-53) that CLEC cost models exclude some of Qwest's relevant product management and sales expenses. The HAI model includes costs for service order processing, payment and collections, billing inquiry and billing systems.[36] There is no basis for including what Qwest calls its

[36] *See* Utah Tr. at 851 (testimony of AT&T's witness Denny). Indeed, Qwest has not disputed in State proceedings that the total of all of the expense factors in its own "ICM" cost model, which includes a factor for product management and sales, is roughly equal to the total of all of the expense factors in the HAI model.

expenses "associated with product management and certain other wholesale functions" (which, in state proceedings, Qwest has described as "product management and sales" expenses).[37]

Qwest has yet to demonstrate that its product management and sales expenses are attributable to providing UNEs and interconnection to CLECs, much less quantified such costs. Such costs, as recorded in Qwest's ARMIS accounts, are "for all wholesale *and retail* product management and sales."[38] As the Utah commission has stated, many of these costs "are either joint with areas of [Qwest] that are not related to wholesale activities, or are only joint with specific wholesale portions of [Qwest]."[39] The Utah commission has properly found that the HAI model's approach to excluding these costs is "a reasonable attempt to remove the costs that are joint to other areas of Qwest's operations, but are not joint to all wholesale activities or are not common to Qwest as a whole."[40]

Qwest has never made any effort to prove the nature and amount of its product management and sales expenses, or their relationship to its wholesale activities.[41] Moreover, Qwest has made no attempt to show that its proposed product management and sales expenses are those that an efficient carrier would incur.[42] And Qwest's proposed expenses for "product management" and "sales" would include, for example, Qwest's costs of developing products that

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[37] *See* Qwest at 52-53; Direct Testimony of D.M. (Marti) Gude on Behalf of Qwest Corporation in Washington UTC Docket No. UT-023003, *In the Matter of the Review of: Unbundled Loop and Switching Rates; the Deaveraged Zone Rate Zone Structure; and Unbundled Network Elements, Transport, and Termination*, filed June 26, 2003, at 7, 16, 19 (describing "product management and sales" expenses as part of "marketing costs").

[38] Utah Tr. at 869 (Qwest's witness Gude) (emphasis added).

[39] *Utah Erratum Report* at 8.

[40] *Id. See also Utah Report* at 14.

[41] *See* Utah Tr. at 876 (testimony of Qwest's witness Gude) (providing list of functions provided by Qwest's product managers, but admitting lack of personal knowledge of what those functions entail or the extent to which product managers actually perform these functions).

[42] Qwest has admitted that it has not conducted a reasonableness review of these expenses. Utah Tr. at 865 (testimony of Qwest's witness Gude).

Qwest developed but decided *not* to offer to CLECs and other services for which CLECs gain no benefit.[43]

Shared Cost Allocator. SBC too takes a stab at trying to gain Commission blessing of one of its current litigating positions—the proper treatment of "shared costs," which SBC describes as activities associated with wholesale marketing and uncollectibles. *See* SBC at 77. In the Ameritech region, SBC has used a "shared cost allocator" in its cost models. The purpose of this allocator is ostensibly to develop a cost factor to determine what percentage of SBC's "shared costs" should be recovered from UNE purchasers. To compute the allocator, SBC divides its "wholesale marketing costs" and "wholesale uncollectibles costs" by "wholesale direct costs" (which consist of a portion of the total forward-looking direct costs computed by SBC). *See* SBC at 77.

As SBC notes, CLECs in the region have advocated changing the factor to include wholesale revenues (rather than wholesale direct costs) in the denominator; SBC asks the Commission to "clarify" that such an adjustment would be internally inconsistent. SBC at 77. The Commission need not amend its rules or take any other action to referee this sort of state-specific dispute; the issue arises from the nature of rate cases in the Ameritech region, where SBC is the only party that submits a cost model. Where conceptual or other errors are identified in SBC's models, CLECs, who have limited information, suggest the most workable or practical fix based on the data available to them.

This is such a case, because SBC's proposed "shared cost allocator" is itself internally inconsistent and riddled with flaws. For one thing, SBC defines "the wholesale services" that it uses to attribute shared costs to its UNEs far too broadly. SBC includes within "wholesale

[43] *See* Cross-Examination Exhibit 14 in Utah PSC Docket No. 01-049-85, *supra* (describing numerous USOCs that Qwest's product managers decided not to offer with the UNE platform to CLECs).

marketing services" such products as switched and special access, compensation with independent exchange carriers, and services to payphone providers – none of which have anything to do with UNEs. Second, the "total wholesale direct costs" used by SBC in its cost study were too unreliable to be used as the denominator of the allocator, because the analysis used to derive those costs was filled with obvious errors.[44] Indeed, SBC's entire approach of calculating the allocator was internally inconsistent, because SBC used *embedded* data in the numerator, and "*forward-looking*" data in the denominator. Starkey/Fischer Testimony at 96.

In response, CLECs suggested the most practical fix available. CLECs adjusted the wholesale marketing costs in the numerator of the shared cost allocator to define expenses attributable to UNEs with more specificity than SBC's broader "wholesale services" approach. As a result, SBC's total wholesale direct costs could no longer be used as the denominator of the allocator,[45] and so CLECs suggested the use of UNE-specific revenues instead. Both marketing expenses and uncollectibles are more causally related to revenues than to direct costs.[46] Moreover, using data on UNE-specific revenues – which SBC had already provided in discovery – was preferable to recomputing wholesale direct costs, which would have required assumptions

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[44] *See* Initial Testimony of Michael Starkey and Warren Fischer filed January 20, 2004, in Michigan PSC Case No. U-13531, *The Commission's own Motion to Review the Costs of Telecommunications Services provided by SBC Michigan*, at 96 ("Starkey/Fischer Testimony"). For example, SBC included both regulated and non-regulated data in its common cost numerator and its direct cost denominator; included its non-cash transitional benefit obligations as an "expense"; failed to reduce its expenses to reflect credits from pension settlements; and failed to account for merger-related savings. *Id.* at 45-69.

[45] *See* Starkey/Fischer Testimony at 72-82. Before using this ratio in calculating UNE shared costs, the CLECs removed all costs specific to product advertising, because SBC does not advertise or perform any other activities intended to stimulate the purchase of UNEs. *Id.* at 75-80.

[46] *Id.* at 97-98. For example, the amount of uncollectibles is likely to vary relative to the amounts of SBC's revenues, and less likely to fluctuate with SBC's costs of producing services. Furthermore, the higher the revenues (and profits) generated by a product, the more likely it is that SBC will increase its marketing costs to stimulate demand for that product. *Id.*

regarding demand (existing and future) that would have been contentious and of questionable validity.[47]

H. Rate Deaveraging.

There is no question that the Commission must continue to require states to implement geographic deaveraging of UNE rates. Competitive entry into local telephone markets is critically dependent on ensuring that the costs incurred by competitors—*i.e.*, the UNE rates charged by incumbents—mimic the incumbents' forward-looking costs. Willig Decl. ¶¶ 145-48. Because these costs vary significantly by population density, averaged UNE rates could only discourage efficient facility investment, encourage inefficient arbitrage, and deny many consumers any opportunity for competitive choice. *Id.*[48]

Contrary to BellSouth's claims, NERA (BellSouth) Decl. ¶¶ 113-114, geographic deaveraging is appropriate even where states have not implemented retail rate deaveraging. Whether a state has implemented retail rate deaveraging has no impact whatsoever on the cost economics that are the touchstone for geographic UNE rate deaveraging. Willig Decl. ¶ 146. The relevant economic issue is whether the UNE rates that CLECs must pay mirror the costs of

[47] There is also no basis for SBC's criticism of the decisions of some State commissions to use total company-wide direct costs (both wholesale and retail) as the denominator of the shared cost allocator. *See* SBC at 77 n.109. In the decision cited by SBC, the Wisconsin commission placed certain "competition implementation costs" into a shared retail/wholesale account, which resulted in the sharing of such costs both by SBC's wholesale products and its retail customers. These costs included the costs of implementing this Commission's rules, negotiations and arbitrations conducted pursuant to section 252, litigating disputes regarding interconnection agreements, and litigating proceedings regarding TELRIC rates. The Wisconsin commission explained that these types of costs should be shared because they were incurred in connection with the opening of the local exchange market to competition, which benefits both retail and wholesale customers of local exchange service. *See Wisconsin UNE Order* at 30-34.

[48] For this reason, the Commission should reject Qwest's proposal (at 61) to consider non-cost implications of deaveraging, *i.e.,* "marketing and operating limitations," when deaveraging by geographic area. Likewise, as long as the state commission deaverages based on cost differences, there is no legitimate basis for the Commission to adopt Qwest's proposal (at 61) to arbitrarily limit the number of UNE zones that a particular state may adopt.

the incumbent. *Id.* If the incumbent enjoys a cost advantage in any geographic area, competitive entry will not be economically viable in that area, regardless of whether retail rates are deaveraged. *Id.* The incumbent always will be able to charge a lower retail price to the end-user as a result of the incumbent's lower costs, regardless of the retail rate structure adopted by state commissions. *Id.*

Likewise, there is no merit to the Bells' claim that geographic deaveraging of UNE rates undermines state subsidy mechanisms. According to the incumbents, some states permit incumbents to charge higher rates in urban areas, to subsidize lower rates in higher-cost rural areas, where they are required to provide service. As a result, these incumbents argue, geographic UNE rate deaveraging permits competitors to enter only in the urban areas, and to charge lower rates than the incumbents, thereby requiring the incumbents to respond by charging rates in urban areas that match those of the competitors. NERA Decl. (BellSouth) ¶¶ 113-114. This reduction in urban revenues, the incumbents assert, is unfair and undermines their ability to use urban revenues to cross-subsidize lower retail rates in rural areas. *Id.* The problems with this argument are that it (1) presumes (without proof) that urban rates do subsidize rural rates and (2) holds the development of effective local telephone competition hostage to state policies of maintaining uneconomic implicit rate subsidies. *See, e.g., Texas PUC v. FCC*, 183 F.3d 393, 424-425 (5th Cir. 1999); *Alenco Communications v. FCC*, 201 F.3d 608, 622-623 (5th Cir. 2000). And that is precisely why the Act forbids the Commission from adopting implicit subsidies to fund universal service. 47 U.S.C. § 254(e). To the extent that a state requires an ILEC to maintain a non-cost-based geographic retail rate structure, the ILEC's appropriate remedy is to seek explicit subsidy funding, not to distort its UNE rates.

I. Non-Recurring Charges

As the *Notice* recognizes, non-recurring charges ("NRCs") "can be a serious barrier to entry," because they "constitute an upfront cost to the competitive LEC that is generally not recoverable if it subsequently loses the end-user customer served with the UNE." *Notice* ¶ 114. *See also Virginia Arbitration Order* ¶ 555; *Local Competition Order* ¶ 745. Accordingly, it is exceedingly important that the Commission's TELRIC rules confine NRCs to the minimum appropriate levels that reflect only non-reusable "upfront" costs that an efficient network provider employing cost-minimizing mechanized processes and technologies would actually incur to provision UNEs. This is an area in which the TELRIC rules have long needed clarification. The Bells have since 1996 attempted to use ambiguities in the existing rules to impose competition-foreclosing NRCs that bear no relation to efficient forward-looking charges, and the Commission has yet to act on the reconsideration petitions filed nearly eight years ago to close off perceived loopholes. The Bells now urge the Commission to make matters worse by undoing state commission efforts to cabin NRCs to reasonable levels and requiring NRCs to be calculated in direct violation of the most basic principles of forward-looking economic cost-based pricing.

In particular, the Bells urge the Commission to require that NRCs be based on their actual "out-of-pocket" costs, rather than on forward-looking costs that reflect the least-cost, most efficient technology. BellSouth at 46; Qwest at 55; SBC at 79-80; Verizon at vii, 77. For the same reasons discussed herein and in AT&T's opening comments in connection with recurring costs, the Commission should reject the Bells' "actual cost" standard and continue to require that NRCs be determined by reference to the processes that an efficient competitor, using the least-cost, most efficient available technology would employ. *See* AT&T at 104; Murray Decl. ¶¶ 20, 22, 126, 136, 184, 191-92; Murray Reply Decl. ¶¶ 66-81.

The Bells argue that their "actual cost" standard is appropriate because their non-recurring costs already *are* efficient, due to their strong incentives to reduce their non-recurring costs as much as possible. *See* ; BellSouth at 47; SBC at 82; Verizon at 79-81.[49] But ILEC cost studies can, and do, reflect inefficient practices even when the ILECs themselves strive to contain their non-recurring costs. The evidence is clear that the ILECs' networks are replete with inefficient non-recurring practices that would be absent in an efficient, forward-looking network. *See* AT&T at 106; Murray Decl. ¶¶ 180-181. Given these inefficiencies, the ILECs' argument amounts to the assertion that they have "incentives" to do the best they can with their current networks. Even if that is the case, such incentives are insufficient to drive costs down to forward-looking levels. Murray Reply Decl. ¶¶ 73-74.

Also, in the "real world" that they repeatedly cite, the ILECs have every reason to be *inefficient* in performing non-recurring activities on behalf of CLECs—in both cost and performance—because the CLECs are their competitors. Using inefficient practices enables the ILECs to continue their monopoly by inflating their costs (and thus the prices that they charge to CLECs) while providing CLECs with inadequate service. AT&T at 106; Murray Decl. ¶¶ 124-133; Murray Reply Decl. ¶ 80 n.94.

The error in the Bells' "incentive" argument made clear by an examination of the various "incentives" that they cite. *See id.* ¶¶ 74-79. For example, the Bells argue that they have incentives to be efficient because: (1) most of the non-recurring activities that they perform for

[49] Qwest asserts that any concerns about the ILEC's incentives to be efficient "are addressed by the possibility of adjustments based on actual marketplace evidence of known and measurable efficiencies achieved by other carriers." Qwest at 55. But Qwest's assertion amounts to an admission that the ILECs' current networks are *not* efficient – and that the specific "incentives" cited by the other ILECs have been ineffective. In any event, Qwest provides no description on when or how the purported "adjustments" would be made, what "efficiencies achieved by other carriers" would be included in the adjustment, or what criteria would be used to determine whether the efficiencies were "measurable."

CLECs are similar to those performed in their retail operations; (2) price caps and competition give the ILECs a strong incentive to be efficient; (3) non-recurring tasks performed exclusively for CLECs have typically been developed in State collaborative proceedings; (4) the various performance measurements and service quality standards (including the penalties that ILECs must pay for failure to meet the applicable benchmarks) give ILECs an incentive to maximize efficiency; and (5) because the NRCs prescribed by state commissions are "low," it would be counterproductive for ILECs to utilize costly, inefficient processes that would increase their costs without any corresponding increase in revenues. *See* Verizon at 79-81; SBC at 82; BellSouth at 47. Each of these "incentives," however, is illusory.

That ILECs perform some of the same non-recurring tasks for retail and wholesale customers gives them no incentive to be efficient. *See* Verizon at 79. Many of the non-recurring activities performed by ILECs for CLECs, particularly those involving UNE loops, have no retail analog. Murray Decl. ¶ 261.[50] Even where retail analogs exist, many of the retail NRCs for those activities do not reflect forward-looking costs. *Id.* ¶¶ 262-263.

Nor do price caps and competition give ILECs sufficient incentive to be efficient. As previously discussed, price caps can give ILECs an incentive to be *inefficient*. *See* Murray Decl. ¶¶ 185-186; Murray Reply Decl. ¶ 76; Selwyn Decl. ¶¶ 12-28. And competition is too insignificant to give the ILECs any presumption of efficiency. Willig Reply Decl. ¶ 50.

[50] In the case of non-recurring activities involving UNE loops, the ILECs have every incentive to be *inefficient*, not only because there are no retail analogs to such activities but also because the non-recurring performance in connection with UNE loops for CLECs using their own switching are more extensive (and thus more costly) that those involving the UNE platform. That incentive to be inefficient will only increase if the ILECs succeed in their goal of denying CLECs the ability to order the UNE platform, which more closely resembles the service that the ILECs provide to their own retail customers. Murray Reply Decl. ¶ 79.

The Bells' reliance on the development of non-recurring tasks in "collaborative proceedings" is wholly misplaced. *See* Verizon at 80-81; BellSouth at 47. At most, those proceedings primarily involved the adequacy of certain specific tasks performed by the ILECs for purposes of Section 271 applications—not the determination of the specific efficient task times or the frequencies with which the tasks would need to be performed. The latter two elements are critical components of a non-recurring cost study. Murray Reply Decl. ¶ 77. Similarly, the performance metrics and penalties cited by the Bells provide no incentive to increase their efficiency, because the metrics and penalties are based on the ILEC's actual tasks and task times in their current networks—not on those of an efficient carrier in a forward-looking network. *Id.* ¶ 78. And even then, the Bells have incurred enormous penalties for failure to meet performance standards (and at least one ILEC, SBC, is attempting to recover those penalties from the *CLECs* through a mark-up on UNEs). *Id.*

The current levels of NRCs similarly do not give ILECs "every reason to make their wholesale operations the lowest cost possible." *See* Verizon at 80-81. If, as the Bells allege, there are "bizarre" discrepancies between NRCs prescribed by States for the same activity (*e.g.*, SBC at 80), ILECs will have no incentive to be efficient in states where the NRCs exceed forward-looking costs.[51]

Finally, the ILECs' arguments that they have sufficient incentives to be efficient are belied by their defense of their current *inefficient* activities, such as manual processing and loop conditioning, in this proceeding. *See* Qwest at 23-24; Verizon at 88; BellSouth at 49-50; Murray

[51] In arguing that an ILEC would not have an incentive to "suddenly start acting inefficiently" when a State commission is about to launch a proceeding to establish UNE rates, Verizon is simply setting up a straw man. *See* Shelanski (Verizon) Decl. ¶ 59. An ILEC has an incentive to be inefficient at *any* time, as long as it can use those inefficiencies to inflate NRCs and impede competition. Murray Decl. ¶ 80 n.94.

Decl. ¶ 181. Although Qwest attacks CLECs and State commissions for adopting flow-through rates that "assume away" faxed orders and assume "fully automated systems that exist only in the imaginations of the CLECs' advocate-directed consultants," the Arizona commission correctly found that such criticisms "fail to recognize efficiencies that would likely be realized with a fully mechanized OSS system."[52] As discussed below, the ILECs' current practice of loop conditioning would be unnecessary if they had implemented industry guidelines established decades ago. If the ILECs have declined to end these patently inefficient activities even under the current TELRIC standard, they will have even less reason to do so under the "actual cost" standard that they advocate here.[53]

The "Reusability" Principle. The Commission should also limit recovery through NRCs to those costs that "exclusively benefit the competitive LEC ordering the UNE." *See Notice* ¶ 121; AT&T at 111-113. If a facility can be used by subsequent carriers (including the ILEC itself) or for later orders without change, the costs associated with that facility should be

[52] *See Arizona UNE Order* at 68-69; Qwest at 23-24; Murray Decl. ¶¶ 196-202. The Arizona commission singled out by Qwest is but one of several State commissions that have agreed with the CLECs that in an efficient, forward-looking network, the rate of manual fallout attributable to CLEC errors or omissions should be only 2 percent. *See Virginia Arbitration Order* ¶ 592 & n.1524 (adopting CLECs' proposed 2 percent rate for CLEC-caused manual fallout and noting that "several state commissions" have adopted the same rate). Similarly, although Verizon claims that it has not automated certain tasks that it performs exclusively for CLECs because they are "performed infrequently," "complex," or "simply cannot be automated," it provides no data or details that either support its contention or call into question the 2 percent CLEC-caused fallout rate approved in the *Virginia Arbitration Order*. *See* Verizon at 80.

[53] Contrary to the Bells' assertion, their "actual cost" standard would not make the rate-setting process more predictable and less subject to speculation than the current TELRIC standard. *See, e.g.,* Verizon at 81; SBC at 80. Experience has already shown that the ILECs lack data on their "real-world" practices, particularly at the level of detail needed to establish NRCs. Murray Reply Decl. ¶¶ 67-72. Even if such data somehow became available, the use of a "real-world" approach would require state commissions to resolve conflicting testimony by subject matter experts on a wide range of issues, including the adequacy of time and motion studies and the reasonableness of the ILEC's practices. *See* AT&T at 105; Murray Decl. ¶¶ 160-171, 178

treated as a recurring charge, because they benefit later users.[54] This approach allows the ILEC the opportunity for full recovery of its total forward-looking costs, prevents double recovery of the costs of non-recurring activities, and ensures that the costs of a reusable activity are not unfairly imposed entirely on the first user of that activity. *See* AT&T at 110-113; Murray Reply Decl. ¶¶ 11, 83.

The Bells, by contrast, argue that they should be allowed to recover the costs of *any* one-time activity "up front" from the CLEC that originally ordered the activity, regardless of whether the activity is reusable. Verizon at vii, 81-85; SBC at 83-88; BellSouth at 47; Qwest at 56. The Bells claim that their proposal is necessary to ensure that costs are recovered in the manner in which they are incurred, consistent with principles of cost causation. In fact, only the reusability test satisfies this standard. Murray Reply Decl. ¶¶ 11, 82-83.

The reusability test recognizes that the costs of any activity which produce a reusable asset (such as a loop that is connected end-to-end from the customer's premises to the central office or a "conditioned" loop) should be recovered as recurring costs – and that only the costs of non-reusable activities are appropriately charged up-front. By authorizing a NRC for the costs of *any* one-time activity, the Bells' approach, by contrast, would lead to double recovery, unfairness, and anticompetitive results that the reusability test is designed to prevent. *See* Murray Decl. ¶ 246, 253; Murray Reply Decl. ¶¶ 83, 90.[55]

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[54] Under the reusability test, the ILEC itself can be a subsequent user that benefits from a facility that the ILEC originally installed for a CLEC. For example, if the ILEC provides and connects a loop for a CLEC, the ILEC will be a subsequent user (and beneficiary) of the loop if it wins back the customer, and the costs that were incurred in creating the reusable facility (such as a cross-connect at the FDI) would be treated as a recurring cost. Murray Reply Decl. ¶ 83 n.98.

[55] *See Local Competition Order* ¶ 751 (requiring state commissions to "ensure that nonrecurring charges imposed by incumbent LECs are equitably allocated among entrants where such charges are imposed on one entrant for the use of an asset and another entrant uses the asset after the first entrant abandons the asset"). One Commission decision on which Verizon and SBC rely (SBC at 88 n.123; Verizon at 83 n.121) recognized the "reusability" standard in the context of (continued . . .)

The Bells' criticisms of the reusability test border on the frivolous. The Bells' principal arguments – including their claim that the reusability test would cause them to be the CLECs' "banker," to "subsidize" CLECs, or to face a substantial risk of nonrecovery (*see* BellSouth at 47; SBC at 85-86; Verizon at 77, 81-84)—are based on a strawman. *See* Murray Reply Decl. ¶ 85. The reusability test would simply require that particular costs be recovered through recurring charges if they create an asset that has enduring value and can be re-used by subsequent carriers. *Id.* Contrary to the ILECs' suggestion, it does not shift true nonrecurring costs to recurring charges or prevent ILECs from fully recovering their forward-looking costs. Instead, it only requires an ILEC to recover costs that create a reusable asset through recurring charges. *Id.* ¶¶ 11-12, 85. That is not a subsidy. *Id.*

There is no merit in the Bells' assertions that allowing them to recover the one-time costs of reusable activities through recurring costs is necessary to avoid violating "competitive neutrality." *See* Qwest at 56-57; SBC at 86-87; Verizon at 81-82. If costs are attributable to more than one carrier, those costs should be borne equally by all carriers that could have "caused" the cost by ordering the activity. Such an approach is competitively neutral, and there is no subsidy. Murray Reply Decl. ¶ 84. The Bells' approach, by contrast, would impose the entire costs of a reusable activity on the ordering CLEC, while giving subsequent users a free ride. Murray Decl. ¶ 250; Murray Reply Decl. ¶84.[56]

(. . . continued)
collocation, by ordering LECs to make refunds in situations where the LEC imposed recurring charges on an initial interconnector to recover common physical collocation construction costs in a central office when at least one subsequent interconnector takes service in that central office and uses those same assets. *See Expanded Interconnection Order* ¶ 50.

[56] Although SBC asserts that the reusability test would require CLECs that manage to keep customers for longer-than-usual periods to subsidize CLECs with greater customer churn (SBC at 86), that result could only occurs if an ILEC could insist on collecting disconnection costs from a CLEC at the time of installation and discount them to reflect the time value of money. *See* Murray Decl. ¶ 275; Murray Reply Decl. ¶ 94.

The Bells are equally off-base in attempting to defend their approach as a necessary incentive to CLECs to avoid ordering "unnecessary" one-time activities or making "inefficient" entry decisions. *See, e.g.*, Verizon at 79; BellSouth NERA Decl. ¶ 105. CLECs have no reason to order services that they do not need. Murray Reply Decl. ¶ 89; Riolo Reply Decl. ¶¶ 87-88. Moreover, the example of an "inefficient entry decision" cited by Verizon is a CLEC's decision to use a UNE loop to provide DSL service. Verizon at 79. The Commission's *Triennial Review Order* (¶ 258), however, has determined that such a decision *is* economically efficient. By contrast, allowing the ILECs to collect NRCs up-front for the costs of reusable activities would not only act as a barrier to entry, but reduce the ILEC's incentive to develop more efficient processes. Murray Decl. AT&T at 113; Murray Reply Decl. ¶¶ 79, 90.[57]

The Bells' professed fears of the risks of nonrecovery are also implausible. Significantly, the Bells do not contend that they have *actually* experienced such problems since the 1996 Act was passed, even though the *Local Competition Order* authorized state commissions to require ILECs to collect non-recurring costs through recurring charges, which involves all of the risks associated with the reusability test—and more.[58] To the contrary, the ILECs have frequently

[57] Verizon argues that the reusability test is improper because "it is equally possible that a CLEC will benefit from a non-recurring task the ILEC performed for its customer." Verizon at 84. Although the one example of such a task that Verizon cites—loop conditioning—is an activity for which the ILEC should assess *no* charge to customers, whether retail or wholesale, *see id.*; AT&T at 116-119, the reusability test is entirely proper because its application will ensure that the CLEC does help to pay for the forward-looking cost of a network that does not require loop conditioning.

[58] Verizon argues that even leaving aside the issue of the risk of nonrecovery, it is "unlikely that the ILEC could fully recover its non-recurring costs through recurring rates," because "such charges would have to be spread across an *estimate* of some measure of forward-looking usage over time" – which would require accurate forecasts of the number of CLECs who will use the facilities in question, the average length of time the CLECs will use the facilities, and the selection of the number of years over which to recover and amortize the expense. Verizon at 84. (emphasis in original). This argument, like many of Verizon's other arguments, is based on the erroneous premise that collections for non-recurring costs that generate non-recurring benefits would be shifted to recurring charges under the reusability test. Verizon's argument is also (continued . . .)

been willing to *waive* collection of non-recurring charges for their *retail* customers (in cases of customer winbacks, for example). Murray Reply Decl. ¶ 87. In the wholesale market, where many of the CLECs are large corporations and have every incentive to pay their bills in order to continue service, the possibility of nonrecovery is remote, notwithstanding the ILECs' purported concerns about "churn" and CLEC bankruptcies. And even if the ILEC does not fully recover the costs of a reusable activity through recurring charges to the initial CLEC, it will have every opportunity to recover those costs from subsequent users of the same facility. *See* Murray Decl. ¶ 268; Murray Reply Decl. ¶ 86.[59]

Moreover, it is utter nonsense for multi-billion-dollar ILECs such as Verizon and BellSouth to suggest that the risk of such nonrecovery would threaten their financial viability – and thus entitle them to the protection of a "risk premium."[60] Indeed, the rationalization of these ILECs that CLECs can simply obtain third-party financing if they find it difficult to pay the costs

(. . . continued)
flawed because it ignores the fact that the forecasts that are actually required (such as the forecasted economic life of the facility and the demand for the facility) are common to all recurring cost calculations. Murray Reply Decl. ¶ 87 n.101.

[59] Verizon and SBC repeatedly cite (Verizon at 77 n.117, 82 n.120, 83 n.121; SBC at 84 n.114, 86 n.119) the Commission's 1987 *Non-Recurring Charges Order* as supportive of their view of appropriate TELRIC principles, but that decision was made more than nine years before the Commission promulgated its TELRIC rules in the *Local Competition Order*.

[60] *See* Verizon at 85 (arguing that "recurring rates would have to include an additional risk premium to compensate for the added financial risk" of underrecovery if ILECs were required to recover non-recurring costs through recurring rates); BellSouth at 47 n.41; NERA (BellSouth) Decl. ¶ 105 (arguing that "the failure to provide 'just-in-time' compensation to an ILEC could interfere with the ILEC's own viability as a business and its plans for long-term investment," and therefore would require a "return component in the cost calculation to compensate the incumbent for the added financial risk that it faces"). *Cf.* AT&T at 31 (describing Verizon's recent announcement of a multi-billion-dollar fiber-optic investment initiative that rivals in scale "the construction of the Roman aqueducts"); Murray Reply Decl. ¶¶ 85-86.

of one-time activities "up front," Verizon at 83, is not only incorrect as an practical matter, but smacks of sheer arrogance. *See, e.g.*, Murray Reply Decl. ¶ 64.[61]

Finally, the Bells' assertion that the reusability test would lead to substantial increases in recurring charges is unaccompanied by any supporting basis. *See* Verizon at 85; SBC at 85. Only in a very few instances (if any) would the reusability test result in transferring existing NRCs to recurring charges, and only if the costs are currently misclassified as non-recurring costs. Instead, the reusability test would *eliminate* the double-counting of costs. Moreover, the costs of activities that create reusable assets may already be included in recurring charges, or may be unnecessary in a forward-looking network. Thus, it is highly unlikely that application of the test would materially affect current levels of recurring charges. Murray Reply Decl. ¶ 88.

For these reasons, the Commission should allow the assessment of NRCs only to recover the costs of activities that exclusively benefit the ordering CLEC, and should require ILECs to recover through recurring charges the costs of any one-time activity that can, or does, benefit subsequent users.

Disconnect Charges. As AT&T explained in its opening comments, disconnect charges should be assessed only when the CLEC actually cancels service *and* the facilities in question will actually be disconnected. An ILEC plainly does not incur the costs of disconnection unless and until the facility is actually disconnected. Allowing the ILEC to assess disconnection charges at the time of installation and without regard to whether the facilities will actually be disconnected would therefore violate principles of cost causation, require CLECs to pay for costs

[61] SBC opposes the adoption of a refund mechanism even if a non-recurring activity benefits subsequent carriers over time, on the ground that an ILEC itself incurs such costs without the availability of a refund mechanism when it performs activities, such as cross-connects, for retail customers. SBC at 88. But SBC's argument suggests again suggests that these costs are, and should be, recovered from recurring charges (which an ILEC can recover from each user over the asset's economic life). Murray Reply Decl. ¶ 91 n.104.

that the ILEC has not incurred (and may never incur), and erect entirely artificial barriers to entry. AT&T at 114-116.

The Bells' opening comments only confirm that the Commission should clarify that (i) disconnect charges may never be imposed when a CLEC orders service and (ii) may be imposed when a CLEC customer discontinues service only if the ILEC will actually disconnect the facilities used to provide service to that customer. Qwest, for example, acknowledges that facilities often are not physically disconnected when a customer terminates service provided by a CLEC.[62] And BellSouth *agrees* that "a rate structure for UNEs where these costs are recovered at the time of disconnect is acceptable." BellSouth at 48-49.

Only Verizon continues to insist that the Commission should nonetheless allow ILECs to assess disconnect charges when a CLEC places a UNE order. *See* Verizon at 86-87. None of their proffered arguments can support this outlier position. Verizon contends (at 86) that assessing disconnection charges at the time of ordering is necessary to "shift[] the risk of non-recovery to CLECs," but there is, in reality, no such "risk" to shift given that, as other Bells concede, the facilities generally are not actually disconnected. Murray Reply Decl. ¶ 93. And Verizon's historical practice of choosing to collect disconnect charges up-front from its captive *retail* customers is obviously of no moment. To justify assessing such charges on CLECs, Verizon would have to prove that it actually incurs disconnect charges in connection with every UNE order and that it could not recover those costs at the time of disconnection. Verizon does not even seriously attempt to do so. The vast majority of UNE orders, including the few (if any) orders that trigger actual facilities disconnection when the customer terminates service, are placed by "repeat play" carriers that pose no serious uncollectibles risk , and the Bells already

[62] *See* Qwest at 41 (when customer premises connected to the network are unoccupied, "carriers keep the line connected to the switch—an efficient practice assumed by the CLECs' proposed NRCs").

recover any residual uncollectibles risk directly through the uncollectibles costs reflected in UNE cost models and UNE charges. *See Virginia Arbitration Order* ¶ 598. There certainly is no legitimate basis for imposing up-front disconnect charges on *all* UNE purchasers to address a disconnect cost uncollectibles risk that Verizon has not even proven to exist.

Verizon's proposal to discount the disconnect costs for the time value of money obviously could not cure the clear impropriety of recovering such costs up-front. Verizon at 86-87. Although Verizon describes such a procedure as "relatively simple," *id.* at 87, it would, in fact, be extraordinarily complicated—as the *Notice* recognizes. *See Notice* ¶ 128; *see also* AT&T at 116; Murray Decl. ¶ 274; Murray Reply Decl. ¶ 94. And even if sufficient data were available to perform the calculation, it would not result in an equitable distribution of present value *among* CLECs. Instead, a uniform discounting approach would penalize competitors who retain customers longer than others (or that pay their bills). *Id.* Verizon itself, as well as SBC, recognize that such a result would not only be discriminatory against carriers with longer-term customers, but would impair the ability of such carriers to recover their costs. *See* SBC at 86 (CLECs with longer-term customers would be put at a "wholly irrational regulatory disadvantage" if they were forced to subsidize CLECs with far greater customer churn). For these reasons, the Commission should, as the Wireline Competition Bureau did in the *Virginia Arbitration Order,* require that any disconnect charges be recovered only at the time of actual disconnection. *Virginia Arbitration Order* ¶¶ 596-598.

Loop Conditioning Charges. ILECs should not be permitted to recover any costs associated with loop conditioning from CLECs, because such recovery is flatly inconsistent with forward-looking cost principles. An efficient, forward-looking network architecture would not deploy the load coils, excessive bridged taps, and repeaters that are removed in loop conditioning. The ILECs' current inefficient conditioning activities reflect their failure to

implement decades-old industry guidelines which call for a network architecture that would require the conditioning of few (if any) loops. AT&T at 117.

Verizon and BellSouth are therefore flatly wrong in urging the authorization of conditioning charges. *See* Verizon at 88; BellSouth at 49. Although Verizon appears to concede (at 88) that conditioning charges are inappropriate when the loop length is 18,000 feet or less, the recovery of such charges would be inappropriate even for loops of longer lengths, in view of the forward-looking cost assumptions in TELRIC that provide the ILEC with payment for a Digital Loop Carrier system whenever conditioning would otherwise be necessary. AT&T at 117. And BellSouth's own recurring cost studies properly reflect an outside plant network without any load coils or excessive bridged taps. *See* BellSouth at 49; Murray Decl. ¶ 295; Murray Reply Decl. ¶ 97.[63]

BellSouth's attempt to justify conditioning charges as a "financial incentive to judiciously request conditioning" makes no sense. *See* BellSouth at 49. No "incentive" would be necessary if the ILECs had implemented industry guidelines. Riolo Reply Decl. ¶ 85. Furthermore, the notion that a CLEC would unnecessarily request loop conditioning is preposterous. *Id.* ¶¶ 86-88. BellSouth's further argument that its voice grade network might be damaged absent such a "financial incentive" is contrary to the reality that loop conditioning can, and does, improve the quality of the ILEC's network. *Id.* ¶¶ 89-91. AT&T agrees that loop conditioning charges should not be treated differently under the TELRIC methodology from other charges, *see* SBC at 82-83, but that means the Commission should require application of

[63] Loop conditioning charges cannot be based on a warped theory of cost causation—*i.e.*, that the CLEC, by ordering conditioning, causes the ILEC to incur the charges. *See* Verizon at 88; BellSouth at 49. Under proper principles of cost causation, it is the *ILECs* who caused the charges to be incurred, as a result of their failure to implement the applicable industry guidelines. *See* Riolo Decl. ¶ 146; Riolo Reply Decl. ¶ 89.

consistent forward-looking principles to recurring *and* non-recurring costs (and, thus, the disallowance of conditioning costs)—not, as SBC suggests (at 83), the use of the ILECs' current networks as the governing costing standard.

The Commission has increasingly recognized the inconsistency of loop conditioning charges with forward-looking cost principles and the pro-competitive goals of the 1996 Act. AT&T at 118-119. The Commission should therefore rule that ILECs may not assess a separate charge for loop conditioning. *Id.* at 121.

Qwest's Disagreement with its Minnesota NRCs. In a misguided effort to justify its proposed "actual cost" standard, Qwest argues that the current TELRIC standard has resulted in resulted in a NRC for "basic installation" that are well below economic costs. *See* Qwest at 13, 55. In particular, it attacks the NRCs set by the Minnesota commission, claiming that are less than those set by other state commissions. The Minnesota commission properly applied TELRIC principles and rejected the bloated NRC charges proposed by Qwest.

As the Minnesota commission recognized, the over $200 "basic installation" charge advocated by Qwest was absurd on its face and the produced by cost studies containing numerous TELRIC errors. *MN Final Order* ¶¶ 158-59. These errors included: (1) the improper recovery of disconnect costs at the time when a loop is initially provisioned, and costs of service order processing for both connecting and disconnecting the loop; (2) recovery of costs for manual work activities that would be performed electronically in a forward-looking network; (3) recovery of costs for activities (such as the participation of two separate work groups in testing activities) that are unnecessary in a forward-looking network; (4) reliance on improperly computed, and overstated, time estimates for various work activities; (5) recovery of nonrecurring costs that should be recovered through recurring rates; (6) allocations of network related costs that are not properly attributable to non-recurring charges; and (7) the assumption

that a CLEC submits a separate order for each loop that it is requesting. Thus, the Minnesota commission properly relied upon the cost studies submitted by AT&T and MCI, which were based on the efficient costs of providing the services at issue.

To be sure, other state commissions in the Qwest region have adopted NRCs that are higher than the Minnesota commission. But these differences do not reflect any theoretical deficiency in the TELRIC standard. Rather, they support AT&T's point that the Commission should adopt the above-discussed clarifications of the application of the TELRIC rules in the NRC context and put an end to the Bells' attempts to exploit ambiguities in the existing rules to impose competition-foreclosing NRCs that bear no relation to efficient forward-looking charges.

V. TELRIC PRINCIPLES MUST APPLY TO ALL INTERCONNECTION RATES AND COLLOCATION

Interconnection and Access Rates. The Commission must reject the Bells' proposals to use different cost standards for interconnection rates. BellSouth at 54-55; Verizon at 55-57. As the Commission held in the *Local Competition Order* (¶ 1056) and reaffirms in the *Notice* (¶ 147), the Act requires that rates for UNEs and interconnection be based on the same cost-based standard. The Commission thus lacks authority under the Act to adopt a different pricing standard for interconnection and UNEs.

In any event, the incumbents' proposals are unsound. BellSouth concedes that charging different rates for different types of traffic would be extremely difficult to implement, because it would require allocating the cost of the same UNE line based on the type of traffic carried over that line. BellSouth at 54-55. And even if such a "separations" scheme were feasible, it would be bad public policy. CLECs have no ability to enter local markets and compete with ILECs unless their customers have the ability to call customers of the ILECs. Willig Decl. ¶ 149. Thus, for the same reasons that ILECs have strong incentives to deny CLECs the right to interconnect with their customers, so do they have strong incentive to charge excessive rates for such interconnection. To ensure a level playing field, it is thus critical that the rates incumbents charge to other carriers for interconnection, including exchange access and local intercarrier compensation, mirror the incumbent's forward-looking economic costs of those services. *Id.*

Relatedly, in its initial comments, AT&T also explained (at 122-23) why there is no legitimate economic basis for pricing access differently than UNEs. To ensure a level competitive playing field, it is critical that the rates incumbents charge to other carriers for interconnection, including exchange access and local intercarrier compensation, mirror the incumbent's forward-looking economic costs of those services. The Bells simply ignore this critical issue.

Collocation. The Commission also should reject BellSouth's proposal to implement "per fuse" amp rates for DC Power provided to collocation space. BellSouth at 55-57. As demonstrated by AT&T (Comments at 123; Klick Decl. ¶¶ 131-39), if incumbents are permitted to charge for DC Power on a per fuse amp basis, then collocation customers will be charged for power that they neither order, nor consume in cases where the incumbent rates per fused amp are based on their cost per actually drained amp. BellSouth does not address that issue, but complains instead that charging collocation customers for the power that they actually consume would be inconvenient because it would require BellSouth to install power meters. But the fact that BellSouth has chosen not to install power meters along with the substantial amount of other power equipment it installs to provide DC Power is not a basis for charging collocation customers for power they do not consume.

VI. RESALE PRICING

The Commission should reject the Bells' proposals to include in wholesale rates marketing and other retail costs incurred by incumbents to compete against CLECs. *See* BellSouth at 51-52; Verizon at 100-101, 104. The incumbents' claim, for example, that wholesale competitors should pay for the incumbents' cost of "educat[ing] customers on [the services] uses." BellSouth at 51; Verizon at 102. But those are exactly the types of marketing services that the incumbent avoids when a CLEC serves the customer, as it is the CLEC that "educates customers." The "education" offered by the ILECs is nothing more than marketing of its own services against the competitor – the paradigm of the type of cost that should not be paid by CLECs in wholesale rates.[64]

BellSouth's *ipse dixit* that incumbents "avoid" no "billing and collection costs when acting as a wholesaler" likewise does not withstand scrutiny. BellSouth at 52. As Verizon frankly concedes "[t]he *retail* billing costs would be avoided, but the wholesale billing cost obviously would not." Verizon at 103. Accordingly, wholesale rates should not reflect any of the billing costs associated with retail customers. Further, "collection" costs for wholesale customers are much lower than those for retail customers. There are far fewer wholesale

[64] The Bells now compete against CLECs in numerous lines of business, including residential and business voice and data services and the costs of marketing those services are recovered in existing retail rates. Selwyn Decl. ¶¶ 66-67. To ensure that competitors do not subsidize the incumbents' cost of competing against them – which plainly would place them at a severe competitive disadvantage – it critical that wholesale rates do not include such marketing and retailing costs. *Id.* Moreover, removing such costs from retail rates is consistent with the Act's requirement that wholesale rates "exclud[e]" any "marketing" costs and the Eighth Circuit's requirement that such costs be removed if they "will be avoided." 47 U.S.C. § 252(d)(3); *Iowa Utils. Bd. II*, 219 F.3d at 755. The marketing and other retail expenses incurred by incumbents to obtain and retain retail customers is completely unnecessary to obtain and retain wholesale customers, Selwyn Decl. ¶¶ 65-67, and is an "avoided" cost within the meaning of section 252(d)(3).

customers and, moreover, wholesale customers are much less likely to disappear, as retail customers can do by moving to another state, or refuse to pay bills.[65]

[65] The Commission already has rejected BellSouth's claim that costs recorded in Accounts 6621 and 6622 should be included in wholesale rates and BellSouth provides no reason here for the Commission to revisit that conclusion. *Local Competition Order* ¶ 917 ("All costs recorded in accounts 6621 (call completion services) and 6622 (number services) are also presumed avoidable, because resellers have stated they will either provide these services themselves or contract for them separately from the LEC or from third parties").

VII. IMPLEMENTATION ISSUES

A. The Commission Should Issue New Competitively-Neutral Rules To Streamline State Commission Pricing Proceedings.

There is no dispute that there is a massive information asymmetry between the ILECs and all other parties, including the state commissions. Willig Reply Decl. ¶ 106. And Bells consistently refuse to make available some of the most basic data that only they have and that are essential to estimate forward-looking costs. Klick Decl. ¶¶ 45-74 (listing examples) Murray/Pitts Decl. ¶¶ 19-22 (refusal to provide fundamental switching data). To avoid such information asymmetry, the Commission should develop a list of data to which the incumbents have unique access, and to which access in necessary to set UNE prices. The Commission should then adopt a rule requiring incumbents to make all data on that list available to parties and the state commission in UNE pricing proceedings. *Accord* Verizon at 106-107 (supporting data disclosure requirements).

In this regard, the Commission should make clear that proprietary data produced in one state proceeding is presumed portable to all states in the region, again subject to an appropriate protective order. There is simply no legitimate basis for an incumbent to withhold from one state commission data that it made available to another state commission. Such a requirement will substantially reduce the cost of litigation by eliminating discovery battles that already have been resolved in one state. It also would increase consistent findings by state commission's by ensuring that each state commission has available to it the information that was made available to other state commissions.

On the other hand, the proposals sponsored by the Bells are designed merely to limit access to relevant data and harass CLECs. For example, Verizon proposes to limit discovery, and to make discovery available only after cost studies have been filed. Verizon at 108-109. It is impossible to predict *a priori* all of the information that will be required in any particular UNE

rate proceeding, and whether the incumbent will provide all such necessary data. In this regard, to the extent that the baseline data submitted by the incumbent are insufficient to allow other parties to develop their own cost studies, discovery should be permitted before the submission of the cost studies. That is just common sense.[66]

The Bells likewise propose that competitors' cost data must be filed in every state proceeding, but this is clearly a ploy simply designed to drive up the costs of litigating UNE cases. *See* Qwest at 62-63; Verizon at 107. As an initial matter, competitors' cost data often have no relevance the forward-looking costs of an efficient UNE provider – indeed, most competitors do not even sell UNEs. And to the extent that state commissions determine that in limited instances, competitors' cost data are required, state commissions can themselves (through the discovery process) obtain that data.

Finally, Qwest's proposal to unilaterally impose new evidentiary standards and shift the burden or proof in state UNE pricing proceedings is contrary to well-established federal court precedent and prior Commission's orders. Qwest at 64. At bottom, it is thinly veiled attempt to eliminate the state commissions' ability to rely on cost studies submitted by competitive carriers, and should be squarely rejected.

It is important to place Qwest's proposals in context. In state UNE rate proceedings, Qwest has repeatedly submitted and relied upon cost studies that violate even the most fundamental TELRIC principles. Qwest's cost studies, for example, routinely are based on embedded network costs with no forward-looking adjustments, and even include retail-only costs in direct violation of the Commission's TELRIC rules. In a recent proceeding in Minnesota, for

[66] Verizon's proposal that discovery be limited to some set period of two or three months should be rejected as well. *See* Verizon at 109. A two or three month time limit would give ILECs an incentive to withhold cooperation during the discovery period in the hope of running out the clock and avoiding production of critical data.

example, the Public Utilities Commission, after describing the "many defects" in Qwest's loop model, which produced loop costs that were "$75 per line more than Qwest's embedded loop costs," rejected Qwest's cost models. *MN Final Decision* at 18-19. Competitors, on the other hand, have submitted cost studies in state UNE pricing proceedings that faithfully comply with the binding federal pricing rules, and state commission's often have relied on the competitors' cost studies as an alternative to Qwest's non-TELRIC-compliant cost studies. *See, e.g., id.* at 132.

To support their studies, CLECs provide specifications of all of the inputs used in the cost studies as well as the underlying data and methods used to compute those inputs. However, there are a few instances where the underlying data used to compute the inputs cannot be disclosed (even in these circumstances, however, the methods used to compute the inputs are disclosed). The reason for such non-disclosure follows directly from the asymmetric access to information between incumbents and competitors.[67] To overcome this information asymmetry, competitors' cost studies sometimes must rely on surveys of switch vendors and other competitors, wherein the vendors and competitors provide switch pricing data. Of course, carriers do not ordinarily make such cost information available to third parties, especially not to Qwest, their dominant competitor. Vendors also do not ordinarily publicly disclose the prices they charge to Qwest or other carriers for that equipment, because vendors reach individual agreements with each carrier. *Id.* Competitors and vendors thus agree to supply the cost information requested by the surveys on the condition that the individual pricing data be kept confidential. *See id.*. Simply put, by

[67] As one example, to determine xDSL investment—the cost of purchasing and installing switches—the incumbents can turn to vast amounts of data, including their current and future contracts with numerous vendors. Competitors, by contrast, have deployed far fewer, if any, xDSL lines and thus generally lack sufficient data to accurately compute forward-looking switching costs.

agreeing to keep the survey answers confidential, competitors are able to collect sufficient accurate data to estimate forward-looking costs.

Qwest seeks to take anticompetitive advantage of this dilemma and asks the Commission to tie state commission's hands with a new rule precluding state commission's from relying on inputs provided by competitors unless supported by all "documents or information" relevant to those costs. Qwest at 64. To do so would leave state commissions no choice but to rely only on Qwest's non-TELRIC cost studies to compute UNE rates, which inevitably would lead to vastly overstated UNE rates.

Placing such a burden on competitors, even when the competitors are the proponents of a particular cost, is both unreasonable and unnecessary. It is unreasonable because, as noted above, competitors often can obtain the necessary underlying data if the data is not disclosed to third parties. In this regard, placing an affirmative burden on the competitors would, in effect, preclude competitors from proposing costs for entire classes of evidence. It is unnecessary because the incumbents do not need the underlying data for every input to assess the appropriateness of the proposed input. The incumbent, as the monopoly provider, has full access to all relevant information required to assess the accuracy of the cost of any input proposed by a competitor, and thus has the capability to submit evidence in state proceedings regarding the accuracy of a competitor's proposals. And state commissions have the necessary expertise to correctly determine the weight it should place on such inputs.

B. The Comments Confirm That The Commission Should Not Adopt A UNE Adjustment Factor.

There is a consensus that adopting an automatic adjustment factor for UNEs would be unworkable. *See* SBC at 89-90; AT&T at 128-31. For example, an automatic annual rate adjustment would inevitably lead to rates for some UNEs that are not based on the "cost" of the element, as required by the Act. 47 U.S.C. § 252(d)(2). *Accord*, SBC at 89 ("A uniform

productivity factor could not possibly reflect the incumbent's real-world costs, because it would by definition be based on predictive assumptions—which would be no less speculative and controversial here than in the price cap context—rather than actual data about the incumbent's network and expenses."). Moreover, no regulatory efficiency will be achieved by adopting an automatic UNE adjustment factor. The adjustment factor would need to be exceedingly complex—taking into account inherent differences between loops and switches, *see* AT&T at 130-31; changes in demand, *id*. at 131; the rapid pace of technological development, SBC at 89; and state-specific differences in UNE costs, AT&T at 131. Under these circumstances, the costs of an adjustment factor clearly outweighs its benefits.

C. The Commission Should Reject The True-up Proposals Advocated By The Bells.

Only Verizon asks that the Commission mandate that the new rates that may emerge from this proceeding must be subject to true up. Verizon at 105. But, as Verizon acknowledges, serious uncertainty may follow the adoption of a true-up mechanism tied to structural changes in the TELRIC rules. *Id*. If the inevitable litigation that follows changes to the TELRIC rules lasts for several years—and if past is prologue, it will—the actual costs of competitive entry would fall into limbo, creating a long-term barrier to entry. For this reason, it is no answer to these concerns that state commissions and CLECs are on notice that the TELRIC rules may change. *See id.* All that means is that a true-up mechanism may not be unlawful. It does not mean that it is a good idea in these circumstances. As noted, a true-mechanism in this case would create substantial uncertainty about what entry costs are for an indefinite period of time, which obviously would discourage competitive entry. Rather, the Commission should rely instead on the professionalism of the state commissions and their commitment to reflect the Commission's new rules as quickly as practicable.

This of course, does not mean that true-up mechanisms are always inappropriate, and the Commission should confirm that state commissions retain authority to issue true-ups where appropriate—such as in the case of "interim" rates or UNE rates that have gone into effect despite a tentative finding that they are too high. The Commission should, therefore, reject Qwest's proposal to arbitrarily limit that authority. Qwest at 76. Again, Qwest is using this proceeding as a vehicle to collaterally attack state commission proceedings where it has no prospects of success in federal court. Indeed, in this case, Qwest's proposal is not based on any legal or legitimate policy reasons, but is intended solely to allow Qwest to avoid $13 million in true-ups owed to competitors in Minnesota.

Specifically, Qwest proposes that the Commission "declare that rates approved by a state commission under the governing methodology at the time of their adoption are not subject to true-up unless: (1) the state commission finds that a party engaged in misconduct that (a) affected the outcome of the proceeding during which the rates were first determined and adopted; or (b) delayed the adoption, and hence the prospective application, of revised rates, or (2) the results of the original proceeding are vacated by a federal court." Qwest at 76. But the Commission has already determined that a true-up is appropriate in precisely the situations where Qwest's rule would forbid it. Whenever the Commission's own Wireline Competition Bureau is called upon to arbitrate UNE rates for interconnection agreements, the Commission not only permits, but *requires*, the use of interim rates subject to true-up. *Section 252(e)(5) Order* ¶ 10. Federal courts also permit for true-up in circumstances beyond the narrow range proposed by Qwest. *AT&T Corp.* v. *FCC*, 220 F.3d 607, 118, 620-21 (D.C. Cir. 2000) (finding consistent with the 1996 Act the Commission's approval of the New York commission's use of interim rates subject to true-up); *see also, e.g., Texas 271 Order* ¶ 88 ("endorsing the use of "interim rates . . . so long as an interim solution to a particular rate dispute is reasonable under the

circumstances, the state commission has demonstrated its commitment to [TELRIC], and provision is made for refunds or true-ups once permanent rates are set"); *California 271 Order* ¶ 37; *New York 271 Order* ¶ 259.

Qwest attempts to justify its proposed rule on the grounds that true-ups under circumstances outside those circumscribed by Qwest would constitute unlawful retroactive ratemaking. But the rule against retroactive ratemaking states only, as a general matter, that agencies are prohibited from changing rates retroactively (*i.e.*, for transactions already completed) to protect the settled expectations of entities that are entitled reasonably to rely on rates that do not appear to be subject to change. *See generally Natural Gas Clearinghouse v. FERC*, 965 F.2d 1066, 1074-75 (D.C. Cir. 1992).

Thus, in circumstances where all parties are aware that rates are subject to true-up, there can be no claim that the true-up mechanism constitutes unlawful retroactive ratemaking. As explained by the D.C. Circuit, "the rule against retroactive ratemaking . . . does not extend to cases in which [the parties] are on adequate notice that resolution of some specific issue may cause a later adjustment to the rate being collected at the time of service." *Exxon Co., U.S.A. v. FERC*, 182 F.3d 30, 49 (D.C. Cir. 1999) (reversing agency for *not* making effective date of new valuation method retroactive); *see also id.* ("The goals of equity and predictability are not undermined when the Commission warns all parties involved that a change in rates is only tentative and might be disallowed"). The Court has further explained that "[a]bsent detrimental and reasonable reliance, anything short of full retroactivity ... allows [some parties] to keep some unlawful overcharges without any justification at all." *Public Service Co. of Colorado v. FERC,* 91 F.3d 1478, 1490 (1996).

D. The Commission Should Reject The Proposals That Would Require States To Ignore Commission Application Of TELRIC Principles.

The Commission also should decline Qwest's invitation to "state, unequivocally and without qualification, that its resolution of issues in its USF proceeding may not be relied upon in determining UNE rates." Qwest at 66. There simply is no legitimate basis for state commission to ignore the Commission's application of forward-looking economic principles in the universal service context.

Specifically, as explained by the Commission, the cost model and inputs for its universal service program are based on "forward-looking costs," *Inputs Order* ¶ 22, which the Commission has defined to mean TELRIC-compliant costs, *Local Competition Order* ¶ 684. To be sure, because the Commission's universal service mechanism is designed to measure the cost differences *between* states and not the precise costs in any particular state, the universal service cost model is based on nationwide input values and does not compute the costs for individual unbundled network elements for any particular state. The Commission therefore has explained that "State commissions . . . may find that it is not appropriate to use nationwide values in determining state universal service support or prices for unbundled network elements and may choose instead to use statewide or company-specific[] values." *Inputs Order* ¶ 31 n.66. And it is these concerns that prompted the Commission to state that "[t]he federal cost model was developed for the purpose of determining federal universal service support, and it may not be appropriate to use nationwide values for other purposes, such as determining prices for unbundled network elements." *Inputs Order* ¶ 32. Thus, contrary to Qwest's claims, the Commission was clearly not holding that state commissions should ignore determinations made by the Commission in the universal service context with regard to basic methodological issues or holding that the input values it found appropriate for determining "national" forward-looking values were necessarily irrelevant to the determination of state-specific UNE costs.

CONCLUSION

For the foregoing reasons, and the reasons set out in AT&T initial comments, the Commission should clarify the TELRIC rules only in a manner consistent with the discussion above and the discussion in AT&T's initial comments.

Respectfully submitted,

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January 30, 2004

CERTIFICATE OF SERVICE

I hereby certify that on this 30th day of January, 2004, I caused true and correct copies of the forgoing Opposition of AT&T Corp. to be served on all parties by mailing, postage prepaid to their addresses listed on the attached service list.

Dated: January 30, 2004
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